

Ministry of Health, Mongolia

Report on Data Collection Survey on Health
Sector in Mongolia

Summary

September 2012

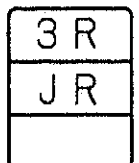
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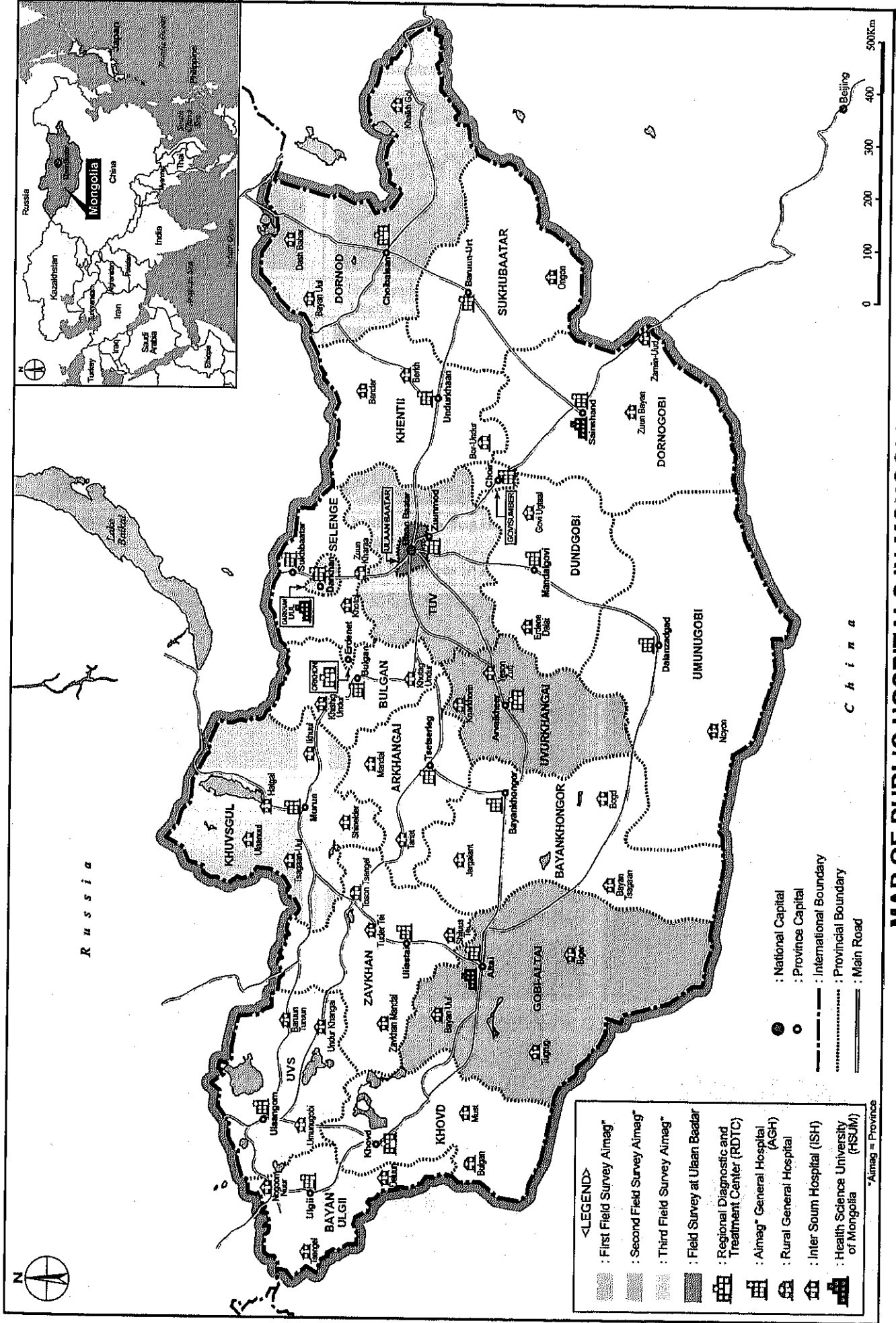


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Japan International Cooperation Agency (JICA)

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MAP OF PUBLIC HOSPITALS IN MONGOLIA (excluding Ulaan Baatar city)

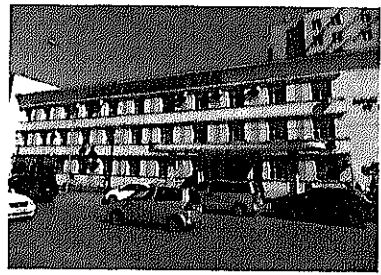
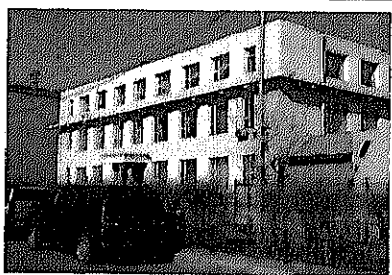
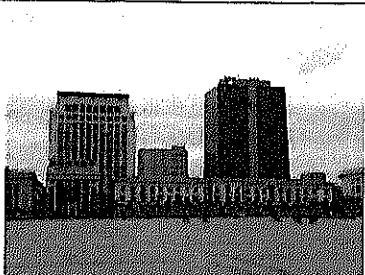
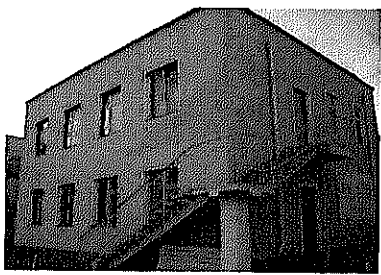


- <LEGEND>**
- : First Field Survey Aimag*
 - : Second Field Survey Aimag*
 - : Third Field Survey Aimag*
 - : Field Survey at Ulaan Baatar
 - : Regional Diagnostic and Treatment Center (RDTC)
 - : Aimag* General Hospital (AGH)
 - : Rural General Hospital
 - : Inter Soum Hospital (ISH)
 - : Health Science University of Mongolia (HSUM)
- *Aimag = Province

- : National Capital
- : Provinces Capital
- : International Boundary
- : Provincial Boundary
- : Main Road

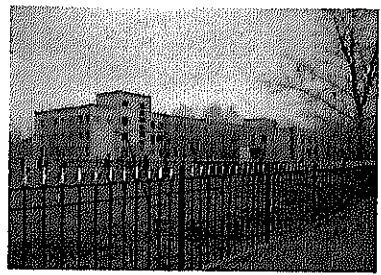


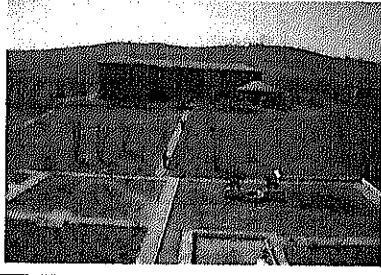
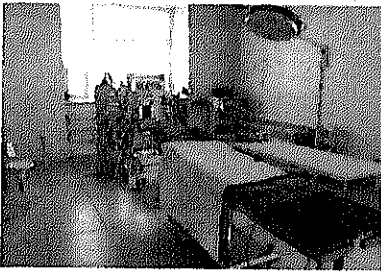
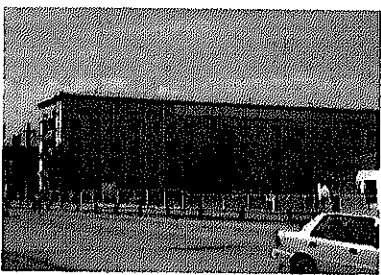

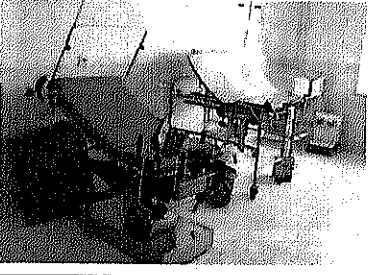



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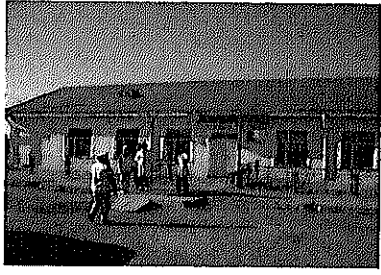



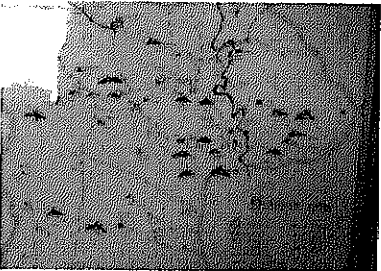
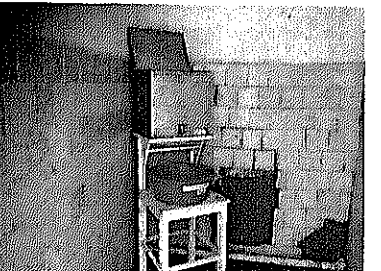








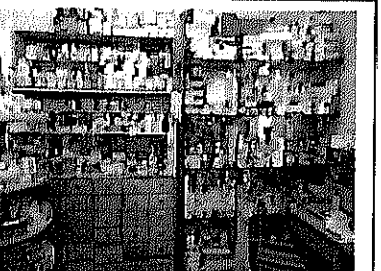
Health Administrative Organizations

		
□ Ministry of Health	□ State Implementing Agency of Health	□ UB City Health Department
		
□ Dornod Aimag Health Department	□ Darkhan-Uul Aimag Health Department	□ Khuvsgul Aimag Health Department





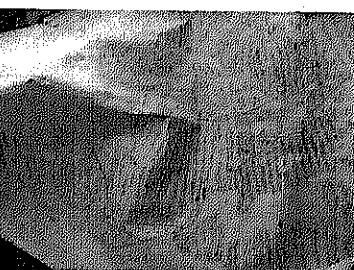





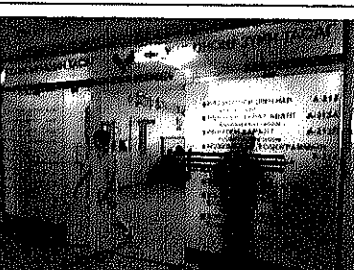




Health Facilities in Aimag

		
□ RDTC (Dornod)	□ RDTC (Uvurkhangai)	□ Aimag General Hospital-AGH(Tuv)
		
□ Maternity Unit (AGH, Darkhan-Uul)	□ Operation Room (Gobi-Altai AGH)	□ AGH (Khuvsgul)
		
□ ICU (AGH, Tuv)	□ Maternity Unit (AGH, Tuv)	□ Out-Patient Department (AGH, Darkhan-Uul)



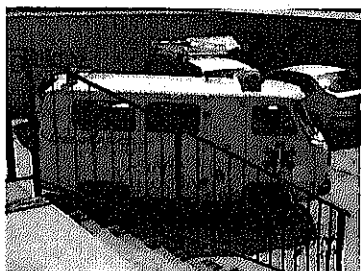
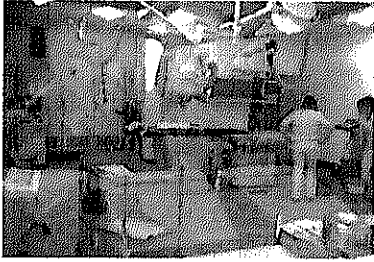


Health Facilities in Aimag

		
□ Soum Health Center (SHC) (Dornod)	□ SHC (Tuv)	□ Consulting Room in SHC
		
□ In-patient Room in SHC	□ Map of Catchment Area of SHC	□ Water Supply in SHC
		
□ Medical Waste in SHC	□ Inter-Soum Hospital (Khuvsgul)	□ Family Health Center (FHC) (Khuvsgul)
		
□ FHC (Dornod)	□ FHC (Govi-Altai)	□ Statistical Unit in FHC
		
□ Child Health Check-up in FHC	□ Room for Director & Staff Meeting in FHC	□ Pharmacy (Outside of Health Facility), Tuv



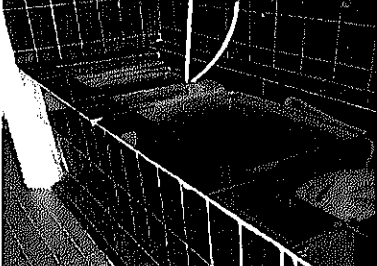


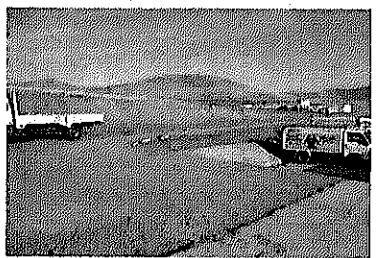

Health Facilities in UB City

		
<p>□ Outside of FHC ("Ger" areas)</p>	<p>□ Consulting Room in FHC</p>	<p>□ Medical Equipment for Prevention of Life Style Diseases in FHC</p>
		
<p>□ Surrounding Area of FHC</p>	<p>□ Map of Catchment Area of FHC</p>	<p>□ Health Check-up regulated by the Prime Minister in Kindergarten</p>
		
<p>□ District Hospital (Songinokhairkhan)</p>	<p>□ Ultrasonic Examination in District Hospital</p>	<p>□ ENT (Ear, Nose and Throat) Examination Room in District Hospital</p>
		
<p>□ Second General Hospital</p>	<p>□ Medical Examination Unit (Second General Hospital)</p>	<p>□ Dialysis Treatment Center (First General Hospital)</p>
		
<p>□ CT Scanner (First General Hospital)</p>	<p>□ Operation Room (First General Hospital)</p>	<p>□ Health Insurance Pharmacy</p>

Specialized Professional Centers

		
<p>□ National Center for Maternal and Child Health</p>	<p>□ National Research Center for Communicable Diseases</p>	<p>□ Ambulance</p>
		
<p>□ Operation Room (Songd Hospital)</p>	<p>□ Mammography (Songd Hospital)</p>	<p>□ Ophthalmological Unit (Songd Hospital)</p>

Infection Control/ Medical Waste/ Blood Transfusion

		
<p>□ Medical Waste in ICU (Second General Hospital)</p>	<p>□ Storage of Medical Waste in Basement (Second General Hospital)</p>	<p>□ New type of Autoclave in Central Sterile Supply Department</p>
		
<p>□ Disposal of Developer of X-ray as Waste Water</p>	<p>□ Incinerator produced by Dornod RDTC</p>	<p>□ Final Disposal Site in Dornod</p>
		
<p>□ Adjacent Final Disposal Site in Dornod</p>	<p>□ Blood Sample Collection of Plasma</p>	<p>□ Storage of FFP (Fresh Frozen Plasma) planned to use</p>

Medical Education Facilities

		
<p>□ School of Nursing, Health Science University of Mongolia (HSUM)</p>	<p>□ Situation of Practical Laboratory Skills</p>	<p>□ Situation of Practical Laboratory Skills</p>
		
<p>□ Rehabilitation Guidance conducted by Gunma University</p>	<p>□ LL Room arranged by Millennium Challenge Account (MCA)</p>	<p>□ Laboratory Room arranged by MCA</p>
		
<p>□ School of Medicine, HSUM</p>	<p>□ PC Room in the School of Medicine</p>	<p>□ Skills Laboratory Room of the School of Medicine</p>
		
<p>□ Preparation of Round Examination among Medical Students</p>	<p>□ Student Clinical Practice in Hospital</p>	<p>□ Branch of HSUM in Gobi Altai</p>
		
<p>□ Branch of HSUM in Darkhan-Uul</p>	<p>□ Seminar of Mongolian Society of Medical Education</p>	<p>□ Mongolian Society of Medical Education</p>

Abbreviations

ADB	Asian Development Bank
AGH	Aimag General Hospital
ANC	Antenatal Care
BCG	Bacille de Calmette et Guérin
CEE/CIS	Central and Eastern Europe and the Commonwealth of Independent States
CT	Computed Tomography
DPT	diphtheria-pertussis-tetanus
EDL	Essential Drug List
FGP	Family Group Practice
FHC	Family Health Center
GASI	State General Agency for Specialized Inspection
GDP	Gross Domestic Product
GMP	Good Manufacturing Practice
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome
HSDP	Health Sector Development Program
HSUM	Health Science University of Mongolia
IMF	International Monetary Fund
ISH	Inter-Soum Hospital
ISO	International Organization for Standardization
JICWELS	Japan International Corporation of Welfare Services
JPY	Japanese Yen
MCA	Millennium Challenge Account
MDGs	Millennium Development Goals
MDR	Maternity Death Review
MDR-TB	Multi Drug Resistant Tuberculosis
MNT	Mongol Tugrik
MOH	Ministry of Health
MRH	Maternity Rest House
NCCD	National Center for Communicable Diseases
NCMCH	National Center for Maternal and Child Health
NGO	Non-Governmental Organizations
OSCE	Objective Structured Clinical Examination
OSPE	Objective Structured Procedural Examination
RDTC	Regional Diagnostic And Treatment Center
SHC	Soum Health Center
SIGO	Social Insurance General Office
STI	Sexual Transmitted Infections
UB	Ulaanbaatar
UNICEF	The United Nations Children's Fund
UNFPA	The United Nations Population Fund
USD	United States Dollar
WB	World Bank
WHO	World Health Organization
WPRO	Western Pacific Regional Office

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1. Development Policy

1-1 National Plan

The Mongolian parliament approved the Millennium Development Goals (MDGs) - Based Comprehensive National Development Strategy of Mongolia 2007-2015 and 2015-2021. As action plans of the strategy, the country has implemented the Resolution on Approval of the Action Plan of the Government for 2008-2012, that was approved by the Cabinet. The following five-year plan (2013-2017) is currently under formulation.

1-2 National Health Programs

Based on the action plan of the health sector described in the national five-year action plan, the Ministry of Health (MOH) formulated an annual plan, Policy Annual Action Plan of MOH, and, in response, each aimag health department formulated an annual action plan in accordance with their circumstances. The Health Sector Strategic Master Plan 2006-2015 currently being implemented, formulated by the JICWELS (Japan International Cooperation of Welfare Services) in cooperation with the MOH, is regarded as a road map that covers the health sector comprehensively.

Listed below are the national health programs currently being implemented.

- 1) National Reproductive Health Program
- 2) Environmental Health National Program
- 3) National Communicable Disease Control Program
- 4) Oral Health Program
- 5) National Fitness Program
- 6) Non-communicable Diseases Prevention and Control Program
- 7) National Injury Prevention Program
- 8) Mental Health National Program
- 9) National Program on Development of Spa Resorts
- 10) National Cancer Prevention and Control Program
- 11) National Iodine Deficiency Disorders Control Program
- 12) National Alcohol Prevention and Control Program
- 13) National Program on Combating Domestic Violence
- 14) National Program for Food Security
- 15) National Program for Supporting Disabled People
- 16) National Program to Improve Health and Social Welfare of the Elderly

1-3 Laws and Regulations

The new Health Law was approved by the parliament on May 5, 2011. In reflection of Mongolian disease structure transferring from communicable-disease-centered to non-communicable-disease-centered structure, the law stipulates the improvement of health and medical care system aiming to promote the shift of treatment-centered medical service to preventive medicine-centered health services.

The MOH introduces major revisions of the law as follows on its website:

- 1) Types of health services as well as roles of health care facilities that provide the services are clearly defined. The rights of aimag and city health care facilities are also clarified.
- 2) Special permits to practice health care activities, the extension and invalidation of the permits, roles and certification of such activities are also defined clearly and in detail.
- 3) In relation to finance of health sector, it promotes independence of hospitals and has enabled public health care facilities to provide paid services within the scope of the law to improve the employees' working environment and social security and purchase, repair and maintain medical device and instruments with the income.
- 4) It refers to social security issues of health professionals. Particularly, it advocates the improvement of social security of employees working at primary health care facilities, thereby solving the problem of securing human resources. It stipulates the establishment of a special payment system for health professionals and provides incentive programs and pension increase scheme.
- 5) It stipulates that responsible administrative agencies establish a commission to perform quality control of health care services and health care facilities create a section that performs internal auditing of quality and safety of the services in an attempt to improve the quality of health care services.

The law also clearly says that people shall first visit a primary health care facility before going to a secondary one.

The new law comprises the following chapters:

Chapter 1: GENERAL PROVISIONS
Chapter 2: HEALTH MANAGEMENT AND ORGANIZATION
Chapter 3: TYPES OF HEALTH CARE AND SERVICE
Chapter 4: SYSTEM OF HEALTH ORGANIZATION
Chapter 5: SYSTEM OF HEALTH FINANCING
Chapter 6: RIGHTS AND DUTIES, SOCIAL SECURITY OF HEALTH PROFESSIONALS
Chapter 7: HEALTH SERVICE AND INSPECTION
Chapter 8: RIGHTS AND DUTIES OF CITIZENS, INVOLVEMENT OF BUSINESS ENTITIES, ORGANIZATIONS AND PUBLIC
Chapter 9: MISCELLANEOUS

In Chapter 4, the term, "medical care," is replaced with the term, "health care." The Article 15 in the Chapter has a list of organizations that provide health care services and some of them were also renamed as listed below.

	Former Title	New Title
1	Family group practice	Family health center
2	Soum and village hospital	Soum and village health center
3	Inter-soum hospital	Inter-soum hospital
4	Clinics	Clinics
5	Maternity house	Maternity house
6	Public health center	Public health center ¹
7	General hospital	General hospital
8	Sanatorium	Sanatorium
9	Ambulance center	Ambulance center
10	Regional diagnostic and treatment center	Regional diagnostics and treatment center
11	Central hospital	Central hospital
12	Specialized hospital	Specialized professional center

2. Health Administration

The Mongolian health sector has organizations in accordance with national and aimag administrative structures in principle. The chart below shows the health administrative organization at each administrative level.

¹At the aimag level, there is a movement to have the Public Health Department in the health department become independent as the Public Health Center. At the district level in Ulaanbaatar, there are District Health Centers and District Hospitals in some districts. However, this is yet to happen at the aimag level.

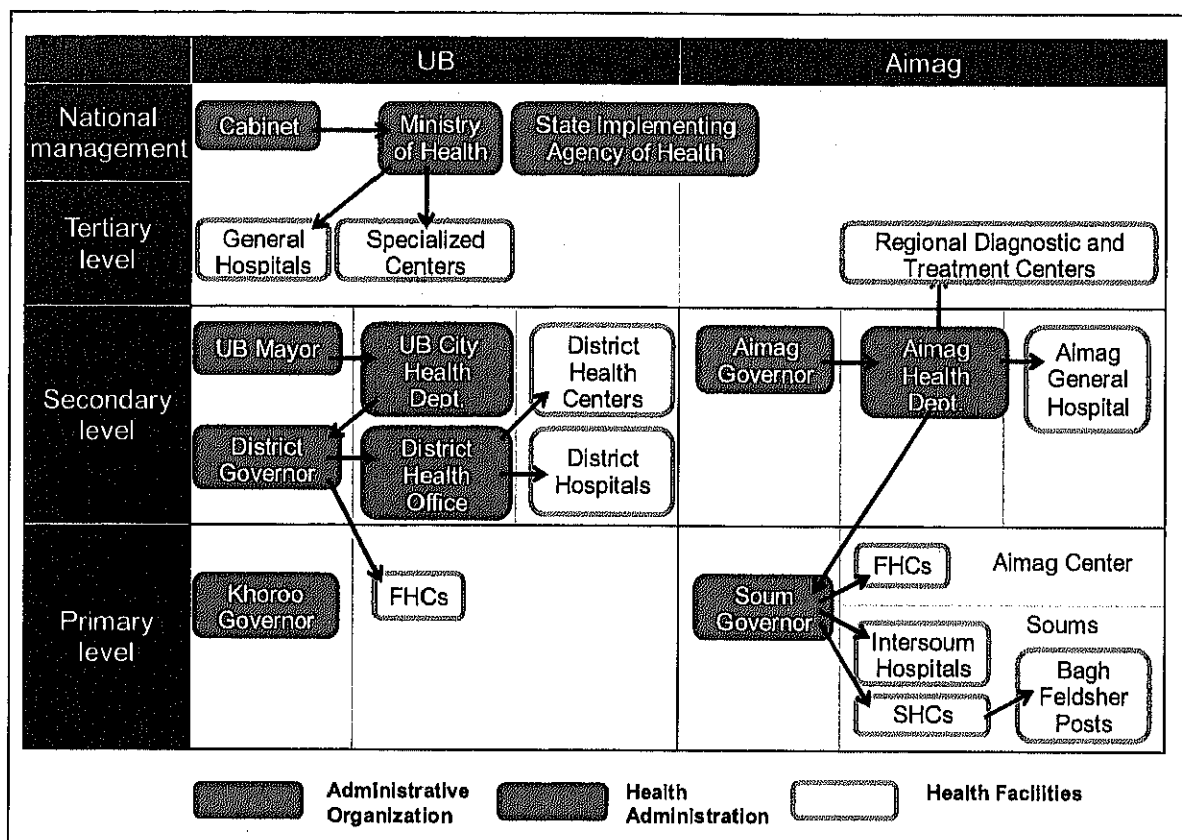


Chart: Organization of Health Administration

Source: compiled by the study team based on interviews and materials

(1) Ministry of Health

The MOH comprises six departments (Department of Public Administration and Management, Department of Strategic Policy and Planning, Department of Medical Care Policy Implementation and Coordination, Department of Public Health Policy Implementation and Coordination, Department of Finance and Investment, and Department of Information, Monitoring and Evaluation) and two divisions (Division of Pharmaceuticals and Medical Device and Division of International Cooperation).

The new Health Law stipulates the duties and responsibilities of the Ministry as follows:

1. To conduct situational analysis on health of people, to monitor and evaluate, and to identify policy and development tendency of the health sector, on the basis of demand and needs;
2. To plan and coordinate health care and services to be provided to people at sectorial level, and to determine location, structure and organization of health organizations, types and levels of care and services, and upper limits of number of beds in hospitals and sanatoriums;
3. To provide technical assistance to citizens, state administrative body and local self-governments towards protection and promotion of people's health;
4. To develop national health program and projects with certain targets to achieve for protecting and strengthening health of people to coordinate the implementation, to conduct monitoring and

evaluation and to measure the results;

5. To order and have scientific and research work performed on pressing issues concerning health;
6. To determine and implement human resource development policy of the health sector;
7. To settle matters of satisfying social security of health professionals, jointly with relevant organizations;
8. To coordinate activities related to describing health and health insurance funding policies, planning the budgets and implementing the policies;
9. To administer and supervise operations of aimag and city health organizations;
10. To determine policies of health management and information system and to provide data and information;
11. To collaborate with non-organizations, international organizations and foreign countries on issues concerning health.

(2) State Implementing Agency of Health

The State Implementing Agency of Health is an agency that implements health-related issues and its head is appointed by the Prime Minister. The agency consists of six divisions (Health Technology and Economic Division, Public Health Division, Medical Care Division, Development of Health Professional Division, Health Statistic Division, and Drug Coordination Division) and two centers (Center for Telemedicine and Center for National Emergency).

Its main duties and responsibilities are described in the Health Law as below.

1. To coordinate enactment of laws and regulations towards health;
2. To develop standards of health care and services, health organizations and manufacturing;
3. To coordinate matters related to issue of special license to medical officers for conducting professional activities;
4. To coordinate activities related to implementation of state policy on health care and service quality and assurance of health accreditation;
5. To collect, compile and disseminate health statistical data;
6. To assure implementation of policies on health, development of the sector and development of health professionals and carry out relevant study;
7. To organize and implement activities aimed at promoting health and to conduct training workshops and advocacy events on protection of citizens' health and prevention from diseases;
8. To coordinate activities of registration and certification of drugs, and to report on quality and safety of drugs;
9. To coordinate events of involving health professionals in post-graduation or in-service trainings and issuing degree of specialization to health.

(3) Aimag Health Department

The aimag health department mainly comprises the public health division and medical care division. In

Dornod, for example, with the population of 70,000, the public health division consists of seven employees and the medical care division comprises five employees including department directors. A total of seven other employees work for the finance, administration and information division (budget, planning, statistics, etc.).

The duties and responsibilities of the aimag health department are specified as follows in the new Health Law:

1. To coordinate enactment of laws and regulations on health;
2. To draw conclusions regarding whether or not to establish health organizations and to issues special license to them, and to submit to the governors of the aimag and city;
3. To regulate matters of adjusting the number of beds in hospitals within the limits defined by the central state administrative body in charge of health matters;
4. To control over operations of the local health organizations;
5. To collect and compile health statistical data of population and news and information and statements of health organizations and to submit to relevant authorities;
6. To implement human resource development policy of the health sector;
7. To work out a program towards assuring social security of health professionals and to implement the program.

3. Health Care System

3-1 Types of Health Facilities and their Overview

(1) UB (Ulaanbaatar) and Aimag Health Facilities

	UB	Aimag
Tertiary level	General hospitals (3) Specialized professional centers (13)	Regional Diagnostic and Treatment Center (4 across the nation)
Secondary level	District hospitals (including district health centers) (12)	Aimag general hospitals (17) Rural general hospitals (6)
Primary level	Family Health Centers	Family Health Centers (only in aimag capital) Soum health centers Intersoum hospitals
Other facilities	Private hospitals and clinics Other government-affiliated hospitals	

(2) Public Health Facilities

The data introduced herein is 2010 data (Health Indicators 2010).

1) Tertiary level

- General hospital: There are three general hospitals (first to third) run by the national government. They are all situated in UB and provide health care services including emergency medical care.
- Specialized professional center: 13 centers that include National Center for Traditional Medicine, National Cancer Center, National Center for Maternal and Child Health (NCMCH), Traumatology and Orthopedics Hospital, Mental Hospital, Dermatology Center, National Research Center for Communicable Diseases, Hospital for Infants, and Center of Forensic Science.

- Regional diagnostic treatment center (RDTC): located in the capital of four aimags, Orkhon, Dornod, Uvurkhangai, and Khovd. They can be regarded as health facilities between secondary and tertiary health facilities.
- 2) Secondary level
- District hospital: UB is divided into nine districts and there is one hospital in each district in principle. There are a total of 12 district hospitals. District health centers and district health offices are also attached to the hospitals.
 - Rural general hospital: They are located in six cities with densely populated soums: Bulgan (Khovd Aimag), Tosontsengel (Zavkhan Aimag), Kharkhorin (Uvurkhangai Aimag), Sharyn gol (Selenge Aimag), Bor-Öndör (Khentii Aimag), and Zamiin uud (Dornogobi Aimag).
 - Aimag general hospital (AGH): They are situated in 17 aimag capitals with no RDTC, excluding UB.
- 3) Primary level
- Soum health center (SHC): There are 274 SHCs across the country, one in each soum other than aimag capital, excluding UB. They basically provide preventive health services including immunization and prenatal checkup. They also sometimes assign feldsher at the health post in baghs, smaller administrative body of a soum. Although an SHC used to have 15 beds across the board, it was categorized into 3 grades in 2001 based on the Soum Hospital Organizational and Operational Standard as follows:
 - Grade I: A clinic that covers a population of 4,500 or more. At least 7 doctors are needed.
 - Grade II: A clinic that covers a population of 3,001 to 4,500. At least 3 doctors are needed.
 - Grade III: A clinic that covers a population of 3000. At least one doctor is needed.
 - Intersoum hospital (ISH): It covers multiple soums or is located in a soum remote from the aimag capital. It is to provide health services more sophisticated than those provided by SHCs. It can be regarded as a hospital between primary and secondary hospitals. There are 37 intersoum hospitals across the country.
 - Family health center (FHC): They are located within soums of aimag capital and each khoroo² in UB. They used to be called family group practice (FGP). There are a total of 218 FHCs across the country--123 in UB and 95 in aimags other than UB.
- (3) Other semi-public health facilities
- The following health care facilities are included in the category: Three maternity clinic, Military hospital, Prison hospital, Railway hospital, Mental hospital, Center for industrial health, etc.
- (4) Private health facilities
- 166 private hospitals and 947 private clinics were registered in 2010. Many of them are situated in UB. It is known that health professions work at public health facilities and work at private facilities outside their working hours to gain extra income.

² Administrative body under district

3-2 Referral System

The referral system in UB and in aimags differs.

(1) UB

Patients first visit an FHC in the jurisdiction. The FHC only examines them or performs simple tests (measurement of blood pressure and blood sugar level, echography, etc.). When they cannot make a diagnosis or patients are in a serious condition or emergency situations, they are referred to upper-level health care facilities. District hospitals house district health centers that mainly perform outpatient examinations and they can perform tests and make a diagnosis.

(2) Aimags

Patients visit an FHC in aimag capital, and an SHC and ISH in other soums. Because an SHC is equipped with very limited examination device, just like FHC in UB, patients are referred to the AGH if they need to have tests for diagnosis.

3-3 Health Finance and Insurance

(1) Health finance

The new Health Law stipulates that health funding allocated to be spent for health care and services shall not be less than 5% of the gross domestic products (GDP). However, for the last 10 years, the health expenditure as percentage of GDP has been on a decline trend although the health expenditures are increasing. In 2011, the expenditures were 334 billion MNT, accounting for 3.1% of GDP.

The total budget allocated to the MOH in FY2012 is 484,117,443,600 MNT (approx. 30 billion Japanese Yen: JPY). This is equivalent to 8% of the national budget (according to the website of National Budget of Mongolia). According to the International Monetary Fund (IMF), the budget for the health sector was 6% of the government budget from 2000 to 2009 in Mongolia. This exceeds the average of the East Asian and the Pacific by 1% and at the same level as the average of 6% of the Central and Eastern Europe and the Commonwealth of Independent States (CEE/CIS) that used to have social regime of former Soviet Union just like Mongolia.

As for the breakdown of the health budget revenues, approx. 76 % comes from the national budget, 20% from the health insurance fund and 1.5% from the overseas donor loan. The budget of the MOH consists of more than 80 items. The total budget is divided into the budget for aimags and UB and budget for projects under direct jurisdiction of the ministry, 234 billion MNT and 250 billion MNT, respectively.

As for the recent tendency of budget allocations, the budget for the operation of sports events and competitions as well as incentives for employees who have worked for a long period in rural areas is increasing. It is because the government encourages the citizens to be involved in sports and fitness activities for preventing lifestyle diseases and promotes settlement of health professionals in rural areas.

The following is the distribution of the budget allocated to hospitals and health facilities that are directly managed by the MOH--14 billion MNT, 5.8 billion MNT and 9.3 billion MNT to each of the first, second

and third general hospitals, respectively--13 billion MNT to the NCMCH that is a specialized professional and research center, 10 billion MNT to National Research Center for Communicable Diseases, 7.8 billion MNT to National Cancer Center, 7.4 billion MNT to Traumatology and Orthopedics Hospital, and 5.7 billion MNT to Mental Hospital. As for other recipients of the budget, 116 billion MNT is allocated to facility investment including health facilities and equipment, 7.5 billion MNT to IT introduction, 6.9 billion MNT for immunization, and 300 million MNT for Asian Development Bank (ADB) 3rd Health Sector Development Project (HSDP). It is also notable that more than 12 billion MNT is scheduled to be allocated to sport-related activities. The budget to the State Implementing Agency of Health introduced is 2.5 billion MNT.

As for breakdown of the expenditures by the level of health care, although the ratio of the primary level have increased a little and that of the tertiary level has declined a little, they have fluctuated very little since 2000 at approx. 30 % to the primary level, 40% to the secondary level and 30% to the tertiary level.

The percentage of the investment in health care facilities and equipment in all health expenditures is increasing every year. It is also decided, as major construction and expansion of health centers after 2011, that 19 billion MNT and 7.9 billion MNT is allocated to the new construction of Center for Maternal and Child Health and expansion of Maternity Clinic I, respectively.

As for budget allocations to each aimags in 2012, the total is approx. 175 billion MNT (approx. 11 billion JPY), which accounts for one-third of the national health budget. The budget to be allocated to UB is approx. 58 billion MNT (approx. 3.6 billion JPY).

The aimag health department compiles budget proposals for the following year produced by each health care facilities in the aimag , while the FHC budget is automatically decided based on the age and sex of the population they cover, and submit them to the MOH. The budget items of the aimag health department include the payroll, utility charges, and supplied expense as well as expenses for training and meetings, IT-related expenses, retirement allowance for employees, and incentives for SHC employees for working for a long period. The expenses for training and meetings are fixed as 22,475,200MNT across aimags. The retirement allowance, temporary cash reward and incentives for SHC employees for working for a long period account for the largest portions in budget items of the aimag health department. In the surveyed aimags, these items account for 33% to 77% of all the budget of aimag health department. (Incentives account for approx. 8% of overall health budget of an aimag.)

The directors of each aimag health department gather in the national health managers' meeting held at the MOH in January or February every year to review the activities of the previous year and discuss the health plan of the year. They also discuss the health budget. According to the officer of the Department of Strategic Policy and Planning of the MOH, the management capacity of aimag is insufficient although the decentralization has advocated the enhancement of authorities of the aimag health department, hence, the budget is still decided on the initiative of the ministry. As a monitoring system of the aimag health department by the ministry, the Department of Information, Monitoring and Evaluation visits the aimag once in every quarter. Although the system is institutionalized, there is no Plan-Do-Check-Act (PDCA) cycle functioning for following activities even issues that require improvement are pointed out, according

to the officer in charge.

(2) Health insurance

The health insurance law of Mongolia was established in 1993 and enacted on January 1, 1994. The Social Insurance General Office (SIGO) of Mongolia, Government Implementing Agency, manages the health insurance fund since January 1, 1996. The current health insurance law was revised in 2002 and a revision is submitted to the parliament as of 2012.

The MOH, Ministry of Social Welfare and Labor and Ministry of Finance are involved in making rules on treatment covered with insurance, legal provisions, and management of fund of the health insurance scheme under the National Social Insurance Council. The SIGO manages the health insurance fund. The aimag social insurance office and UB social insurance department make reimbursement payments to health facilities and insurance pharmacies at the aimag and city level.

The insured of health insurance are categorized as follows:

- Employee: (4% of monthly salary as insurance premium, 2 % borne by the employee and 2% borne by the employer)
- Self employed individual: (pay 1% of income declared to the taxation office as insurance premium. The minimum amount is 140,400MNT per year.)
- Herder, university student, vocational school student, and fulltime student of professional training center: (The insurance premium is 8,040MNT per year.)

The national government covers all the insurance premium of the insured below from the national budget.

- Mother (or father) raising a child aged 2 or younger (or up to 3 years for twins)
- Soldier in service
- Elderly citizen with no other income than pension
- Prisoner serving their duties
- Child aged 16 or younger and student aged 18 or younger
- The poor

Regardless of health insurance holder or not, the new Health Law stipulates the following health and medical services be provided free of charge:

- Medical examination, testing and treatment provided with medical prescription during the periods of pregnancy and child delivery and within 14 days after the child delivery/ only with pregnancy and child delivery related reasons/;
- Pediatric care and services to be provided to children by state owned health organizations;
- Infection study services, compulsory and epidemiological prescription based vaccination, sterilization of nidus of infectious disease and disinfection;
- Public health, ambulance service and primary level health care and service provided in the state of disaster;
- Treatment of a person, who falls sick or gets injured while in justifiable defense and/or saving life

of others in extreme necessary.

The health insurance covers the following health and medical care: outpatient examination and tests, hospitalization, day medicare (including chronic disease treatment and periodical injection), traditional medicine, rehabilitation, spa and sanatorium, and palliative care at secondary and tertiary level public health care facilities, and hospitalization, traditional medicine, and rehabilitation, spa and sanatorium at private hospitals. The maximum coverage is defined for 115 diseases.

As for the insurance payment to be made by health insurance, payment to public and private hospitals account for 78.8% and 15.0%, respectively, and 2.7% and 3.5% is paid to sanatoriums and insurance pharmacies, respectively. This shows that insurance is utilized little for drug purchase.

The revenues and expenditures of health insurance are increasing year after year to reach 122 billion MNT of revenues and 90 billion MNT of expenditures in 2011.

As for the sources of revenues of health insurance, 85% come from employees and 9% from the vulnerables. As for the composition of expenditures of health insurance, the vulnerables for whom the insurance premiums are covered with the national budget account for 63% of all expenditures. According to the SIGO, this suggests that main users of public health facilities are the vulnerables, and employees and other citizens who can afford to pay for other health facilities receive treatment at private hospitals or overseas.

The percentage of the insured is unstable, dropping to 73.6% in 2006 and recording 98.6% in 2011. This is because the health insurance issue is sometimes used for elections, according to the SIGO. For example, the participation rate in 2011 is very high, because 21,000MNT that is currently paid to all nationals per month as Mongolian Human Development Fund was approved to be spent for health insurance as a campaign promise of a political party and, as a result, the fund was used for payment of health insurance premiums automatically for people who had not been capable of paying them. Because the fund program is terminated in June 2012, the health insurance participation rate is also likely to decline again.

Currently, a bill to revise the health insurance law is being submitted to the parliament and the following is main revisions:

- Raise the coverage ratio for high medical care to expand the extent of health services covered with insurance.
- Quality control of health care is added in order to raise the participation rate of health insurance so that all nationals can receive health care services equally.
- Separate health insurance duties independently from social security (pension, social welfare allowance, compensation for accidents at work, unemployment insurance, and health insurance).

These revisions are proposed because 1) an increasing number of people cannot feel the advantage of current health insurance scheme as the health care cost increases, 2) there is a call for improvement of quality of health care among Mongolians, and 3) three ministries are in charge of health insurance program and the National Social Insurance Council consisting of parliament members monitor the three ministries, but the coordination by the council is becoming difficult.

3-4. Health Information System

The health information system in Mongolia is developed in terms of data collection and feedback.

The aimag health department receives health data of the previous month from FHCs, SHCs, ISHs, rural general hospitals, RDTC and AGHs on the first day of every month. UB health department also receives data from FHCs, district hospitals and other hospitals under its jurisdiction. After that, aimag and UB health departments submit the compiled information to the State Implementing Agency of Health by the fourth of every month. The agency submits the whole information including general hospitals and specialized professional centers to the MOH. At the same time, the agency issues national health data in a pamphlet, Health Statistic Information, and aimag and UB health departments also issue the pamphlet that covers data of the areas, and feedback it to health facilities under their jurisdiction.

The monthly report compiled by the aimag health department contains such information as population, birth, deaths and diseases. Information at soum level can be obtained in all aimags is population, birth, deaths, number of registered pregnant women, number of infant death, number of children death aged 1-5, number of outpatients and inpatients, number of cases of communicable diseases.

As an annual report, there is a specified 29-page format, and it is submitted to the agency by aimag and UB health departments. The items to be reported in each page are defined in detail and a massive volume of health data is reported.

Data can be analyzed in detail due to many data items are collected. However, its accuracy is not guaranteed as wrong data entry was seen at the aimag health departments. It was also pointed out in the workshop of World Health Organization (WHO) Country Accountability Framework in March 2012 that the data quality was not evaluated periodically.

3-5. Drug Supply

The Essential Drug List (EDL) is prepared separately at primary, secondary and tertiary levels. The list is revised every four years and the sixth version published in 2009 is currently used. The list contains 340 kinds of drug, with no traditional drugs. About 120 kinds are covered with health insurance. There is also Mongolian Essential Drug Handbook that contains the composition, dosage and administration, effect and efficacy, pharmacokinetics, side effects, and precautions of drugs in the EDL. The fourth version published in 2010 is currently used.

Hospital pharmacies dispense drugs only to inpatients in principle. Outpatients purchase drugs at external pharmacies with prescription. As for regulations on sale of drugs, prescription drugs and non-prescription drugs are separated. However, in reality, almost all drugs excluding narcotic drugs can be purchased without prescription. Pharmacies also sell injection drugs and syringes. Mongolia is known as a country where its people tend to request for treatment with heavy use of drugs and that injection drugs are used frequently, thus, drugs may be used improperly by self medication.

The ADB assists the tightening of drug control and quality testing in the 4th HSDP. The following is the sector analysis results:

- Mongolia is one of the very few countries without a National Regulatory Agency; most other

- countries—even smaller ones—have followed the recommendations of the WHO to establish a regulatory agency for control of medicinal products and medical supplies.
- Given the population size, the limited budgets, and also the relative small size of the market, some regulatory functions need international connections for reference and backup. This is true for the registration of advanced innovative products, clinical trials, inspection, and for laboratory testing. Currently, there are very few international connections
 - A survey by MOH undertaken by the WHO in 2007 revealed that 26% of all sampled medicines were of insufficient quality. Half of these were counterfeit (illegal imports, or not registered), and half were of substandard quality (less active ingredients).
 - The drug control laboratory has received very little investments or capacity building since it was brought under the State General Agency for Specialized Inspection (GASI).
 - Mongolia has switched from a central state-run medicine supply system to a privatized supply system. Now 38 production companies, 200 importers, around 40 specialized wholesalers, and 1,200 retail pharmacies operate in the country, plus over 300 soum-based drug revolving funds and all hospitals and health care facilities have their own decentralized procurement mandate and drug budgets. The total market is estimated at 42–45 million USD (in 2009 at wholesale purchase price), with a forecasted annual growth of 10%–15%.
 - Several domestic producers have invested in new facilities and international production standards (Good Manufacturing Practice: GMP). However, the inspection is inadequate and an internationally recognized certificate cannot be issued and there is no legal base. This implies that even the best pharmaceutical companies in Mongolia have serious limitations in exporting their products.

The drug quality assurance test is performed by the drug audit policy office in the Health, Education, Culture and Science Inspection Department in the GASI, Regulatory Agency of the Government of Mongolia, at the national level. The drug audit policy office consists of four employees and they are each responsible for drug quality, biochemical drug products, herbal products, and importation and exportation and smuggling control. In addition, one officer in charge of drug quality assurance is assigned in each district in UB and in each aimag. Officers in charge of drugs are also allocated at four customs (airport, Altanbulag and Sukhbaatar both on the border with Russia, and Zamiin uud on the border with China) across the country.

3.6 Traditional Medicine

There is certain demand for traditional medicine among Mongolians. Many FHCs are equipped with such equipment for physical therapy as infrared lamps, electromagnetic wave and laser device. For example, the Tuv AGH is equipped with a consultation room for traditional medicine, where suction cup therapy and traction of cervical spine and lumber are performed. As this shows, much of traditional medicine covers a field categorized as orthopedic procedures in Western medicine.

Traditional medicine using drugs and health food is also popular to some extent. For example,

seabuckthorn (Чацаргана in Mongolian) sold as juice, etc., is popular as it is said to work on cold and stomach illnesses.

It is notable that there are relatively many six-year programs to train traditional medicine doctor, although it is explained in detail later in the human resources development section. This shows that traditional medicine is established as a national medical practice together with Western medicine.

4. Current Situations of Healthcare Services

4-1 Tertiary Health Care Facilities

(1) Overview

1) General Hospitals

Three general hospitals located at the center of UB. Based on amendment of Act on Medical Care in 1999, hospitals have role as not only national level tertiary hospitals but also as tertiary hospitals in UB. For this, UB is divided into three areas, the eastern, the northern and the western area, and each general hospital is in charge of each area.

Since the First General Hospital is the oldest central general hospital, it is still called "Central Hospital" with 544 beds. Departments of liver, kidney, vascular diseases, and ophthalmology in the hospital are said to be superior to those of other two general hospitals. With 24 dialysis machines donated by Japanese private foundations and other donors, the hospital recently established a dialysis center. Now this hospital is planning to start clinical practices of liver and kidney transplantation.

The Second General Hospital used to be a hospital for VIPs of People's Revolutionary Party and foreigners with 25 beds since 1946, called "Hospital for Officials". Currently it takes charges of the eastern part of UB, and Dundgobi, Dornogobi and Umnugobi aimags. It became the present hospital with 209 beds in 1991 and had started accepting general patients. In 2010, the hospital obtained ISO (International Organization for Standardization) certification for the first time in the Mongolian hospitals. It is currently planning to establish "National Diagnostic Center".

The Third General Hospital with 350 beds is a general hospital specialized in treatments of cardiovascular and cranial nerves disease and takes charges of the western part of UB. Its medical equipment is rather old but it carries out 1,700 insertion of catheter, 500 to 600 coronary interventions and 500 cardiac operations a year respectively.

The number of outpatients in each general hospital exceeds 100,000 and that of inpatients is more than 10,000 each year. They have specialized departments such as internal medicine, surgery, pediatrics, gynecology, otolaryngology, ophthalmology, dermatology, urology, traditional medicine, and neurology. Treatment and diagnose sections have emergency theaters, operation rooms, department of anesthesiology and intensive medical care, department of radiology including CT and angiogram, and department of diagnostic imaging, pathology and clinical tests, physioclinic department, pharmaceuticals, and blood centers.

2) Specialized Professional Center

There are thirteen specialized professional centers, which play an important role to take care of severe patients who require specialized treatment or who are transferred from local regions.

Among specialized professional centers, NCMCH shows patricianly high rate of utilization. NCMCH was established in 1930 as a pediatric hospital. In 1985, its maternity department was established and became the present maternal and children's hospital. It has 658 beds and the average number of inpatients per year is 35,000 (obstetrics and gynecology department:17,000, pediatric department:18,000). In 2011, 22,440 inpatients are from UB and 13,404 are from other areas. There are 150,000 outpatient, 10,000 operations and 10,000 deliveris in average per year.

In addition to obstetrics, gynecology and pediatric department, it has departments of internal medicine, cardiology, endocrinology, surgery, otorhinolaryngology, ophthalmology, prevention of deterioration of vision, gastroenterology, kidney and urology, endocrinology, neurology, allergy, hematology, featural surgery, dental surgery, adolescence health, dentistry, and kidney surgery. These specialized departments are in order to treat patients of obstetrics or gynecology department with complication.

Characteristically, NCMCH mainly handles high risk child birth. The most frequent type of diseases or symptoms due to child birth or pregnancy in 2011 is cardiovascular diseases such as high blood pressure and secondly urogenital diseases. Other problems of pregnant women at the hospital are intrauterine growth retardation, prematurely separated placenta and placenta previa. The most frequent diseases at the time of birth are uterine inertia and secondly premature rupture of the membrane. In 2011, number of caesarean section is 2,933 out of the number of child birth in total (10,208).

3) Regional Diagnostic and Treatment Center (RDTC)

The Government of Mongolia upgraded aimag general hospitals (AGHs) located in central cities of each region to RDTCs, tertiary health care facilities in each region. Therefore, the RDTC functions as a tertiary hospital for surrounding aimags and also as an AGH for the located central city of the region. There are four RDTCs across the country. The RDTC in Dornod aimag covers 220,000 residents in three eastern aimags. The RDTC in Orkhon aimag covers 450,000 residents in five north aimags. The RDTC in Hovd aimag covers 350,000 residents in five eastern aimags. The RDTC in Uvurkhangai aimag covers 260,000 residents in three central aimags.

4) Challenges of Tertiary Health Care Facilities

The general hospitals offer comprehensive medical services and other special medical services are provided by the specialized professional centers. However, many patients directly go to tertiary hospitals because the level of medical services in the secondary health care facilities are not so high. Such a situation causes problems that the tertiary hospitals have to provide medical services such as operations of appendicitis which should be offered at the secondary hospitals.

As a whole, the abilities of doctors at the tertiary hospitals as specialized doctors do not differ from those at the secondary hospitals. The quality of medical services offered at the secondary and tertiary hospitals

are not so high and satisfaction levels of patients are rather low.

The problem of quality of health services, which was pointed out by ADB and WHO, is due to the following reasons. The Government of Mongolia has not established policies and systems to improve quality of health professionals. On the other hand, when evaluating health services, the State Specialized Inspection Agency only confirms that provided health services meet the minimum standard applied to each health facility. Inspectors of the Agency are not involved in health services and their medical knowledge is insufficient. In addition, incentives for better services are not provided to health professionals. Additionally, those health care facilities have a lack of strong leadership as well.

At the same time, Mongolia has a problem that it has excessive health care facilities comparing with other Commonwealth of Independent States (CIS) countries. Mongolia has 23.4 health care facilities per 100,000 people against 5.78 health care facilities per 100,000 people in other CIS countries. The average days of hospital stay is nine to eleven per inpatient.

(2) Infrastructure of Health Care Facilities

In Mongolia, tertiary health care facilities (the general hospitals, specialized professional centers and RDTCs) are subject to Standards, which set forth provisions with regard to scales of clinics, numbers of staff by department, medical equipment, available treatments and so on. Since many of tertiary health institutes are large-scale facilities, their buildings have deteriorated due to aging, but their structure are still solid.

The visited tertiary health care facilities were found to have been discharging medical waste water to general drainage ditches due to a difficulty in onsite processing. This problem will be covered at the 5th HSDP. In addition, plumbing installations deteriorated due to aging, and it may cause a decline in quality of water through contamination by rust, etc. As for electricity, power is supplied to each hospital at 220V/50Hz (single phase) and 380V/50Hz (three phase) (nominal values). There are less interruption of electric service but voltage is instable. Each hospital addresses such situations by using voltage stabilizer. However, lamps of medical equipment, especially those require light sources have short life.

(3) Medical Equipment

The above mentioned standards include a list of medical equipment to be installed at the tertiary health care facilities. While the hospitals in UB maintain various kinds of equipment rather than the items on the standard list, RDTCs are not completely equipped with required equipment. The general hospitals of UB directly receive funds through independent connections with overseas universities and hospitals. On the other hand, RDTCs do not receive any substantial funds except those from Japanese grant aids so they carefully continue to use the same equipment for more than 10 years.

Each hospital prepares request for equipment and submits to Medical Policy Improvement Office of MOH via aimag health department on annual basis. MOH approves procurement of equipment and spare parts within the limits of the budget.

Most of equipment independently procured by MOH or hospitals are made in China, Czech or Poland,

which may have problems in quality. Therefore, it is difficult to obtain expected performance. Moreover, genuine spare parts and consumables are expensive, consequently there is a tendency to procure Chinese products with similar specifications to authentic products. With limited fund, equipment and spare parts they procure tend to be cheap but low-quality, which shows the costs of consumables are a burden to hospitals.

The tertiary health care facilities are required to establish bio medical sections for maintenance of equipment so that each hospital has at least one engineer who is in charge of maintenance. Most of these engineers graduated from professional schools or universities located in UB. However, their expertise in maintenance of medical equipment is limited in repairing power supply, user maintenance and calibration.

According to the interview survey, MOH considers that the causes of operational problem in maintenance of medical equipment as follows; there is still a social norm that such maintenance work should be carried out by engineers, and the hospitals lack ideas about hospital management in a manner consistent with the situation of aging of equipment. Engineers try to teach user maintenance methods to doctors, nurses, etc. But many of doctors do not have time to learn. MOH trusts products made in Japan, USA, and Germany. Physiotherapy products made in Russia including the former Soviet Union are high quality and made in Czech are acceptable.

One of the problems in Mongolia is a lack of method to measure a performance level of equipment. In case of repairs by makers, quality of equipment repaired is warranted based on the results of inspection. However, in case of repairs by engineers in hospitals, there is no clear and widely accepted criteria for validation of repair so that these hospitals have no choice to depend on engineer's personal judgment.

Surveys were made on RDTCs in Dornod and Uvurkhangai aimags. Since Dornod is on the border with China and Russian troops had been stationed, it has received various supports from the Russian troop. Such supports had affected health administration of this aimag. As a result, hospitals are in orderly conditions, and documents and medical equipment supplied by Japanese grant aids more than ten years ago are still being used. High level management skills of presidents etc are deemed to encourage other hospital staffs. On the other hand, even though the same type of medical equipment was donated to Uvurkhangai aimag, not so many of such equipments remained.

4-2 Secondary Health Care Facilities

Secondary health care facilities means district hospitals in UB and general hospitals in each aimag. Fundamentally, in referral system, secondary hospitals should accept patients referred from primary health care facilities. However, patients are frequently seen directly visiting secondary health care facilities just because they want to have medical services in a larger and well-prepared facility. As a result, a referral system in UB does not sufficiently function.

Normally the secondary health care facilities in UB often run clinical tests such as blood and x-ray on patients referred from primary health care facilities. However, they lack medical equipment indispensable for diagnose of cancer such as CT and endoscope so that these secondary health care facilities frequently fail to confirm their diagnoses.

Doctors working at secondary health care facilities are required to develop their speciality to a certain level. However, specialist training programs offer usually one to 1.5 years' training, which is rather shorter than that of 5 years in West Europe. As a result, diagnosis skills at such health care facilities are not sufficient.

(1) Overview

1) Aimag general hospitals

In Mongolia, they have AGHs in 17 aimags, except for locations of RDTCs and UB. Many of the AGHs have 200-350 beds. The numbers of outpatients of each hospital are 10,000-100,000 and that of inpatients are several thousand to ten thousand per year. Departments of AGHs do not differ from those of the tertiary health care facilities as they have specialized departments such as internal medicine, surgery, pediatrics, gynecology, otolaryngology, dermatology, ophthalmology, dermatology, urology, urology, traditional medicine, neurology etc. Major contents of medical treatment at the AGHs are often gastroenterology, urology, cancer, and pulmonology. Their treatments and diagnoses sections have emergency rooms, operation rooms, departments of anesthesiology, intensive medical care, radiology including CT and angiogram, and departments of diagnostic imaging, pathology and clinical tests, physioclinic department, pharmacy, and blood centers etc.

Sub-specialized doctors are likely to deny to take care of patients who require general treatment. For example, in case of a pregnant woman who suffers from high blood pressure, she was referred to an internal medicine specialist because a high blood pressure was treated as a field of internal medicine even though such woman should have treated by gynecology. As just described, AGHs have a wide range of clinical departments but depth of cover areas by specialists is limited. It seems to be hard for doctors to update medical knowledge and even share diagnoses with co-workers.

According to the field survey of AGHs in Darkhan-Uul, Gobi-Altai, Tuv and Khuvsgul, scales of facilities and situation of medical services do not greatly differ among hospitals. Gobi-altai AGH, which is the target aimag of the 3rd HSDP by ADB and grant aids by Japan in 2000 is likely to have relatively enough quantities of medical equipments. Tuv AGH had a leading-edge AV room since it was planning to implement a project with a university in Korea on telemedicine center. In case of other AGHs, new medical equipment were seemed to be mixed with aged medical equipment overall, since they were independently supplied with electrocardiographs, ultrasonograph etc. by donors.

In many AGHs, a broad range of clinical practices is covered by a dozen specialist doctors, as a result, only one or two specialist doctors are in charge of each department. Such limited resources are similar to a case of engineers of diagnoses equipment. For example, many of AGHs have only one radiological technologist.

In such circumstance, only chief doctors of hospitals can check whether radiological technologists take x-rays in an appropriate and safe manner. However, through field survey to six AGHs, it was found that they did not wear protective gears or doors to corridors for patients were opened while x-rays were taken. Moreover, at interviews with medical specialists, it was suggested that such situation occurred not because

they did not pay attention to safety control, but because they did not sufficiently understand possibilities of radioactive hazard. Also, in laboratories, it was found that they used laboratories without exchanging or installing extensive quality air filters of clean benches of microbiology laboratories which might adversely cause even spread of bacteria.

These hospitals are now taking measures to solve such problems, such as attendance at trainings at UB, update of medical knowledge and skills. However, directors of these hospitals told us at interviews that it was difficult to change or improve actions of their mid-class doctors since their habits die hard.

2) District Hospitals of UB

Currently there are only twelve district hospitals in UB as a result of decommission and consolidation of pediatric hospitals and clinics. Due to such background, there are some spatial issues in their facilities such as insufficient inpatient wards or too small outpatient departments.

District hospitals are dispatched specialists as same as the AGHs and they have a certain number of beds, mostly of internal departments and neurology. Currently primary health care service put emphasis on prevention of disease so medical care is district hospitals' major tasks. However, their laboratory do not function efficiently. In addition, laboratory opens shorter than hospital open hours. Despite that they also have emergency department, such department lacks sufficient system to accept severe patients, since their medical equipment are limited only such as examination tables, oxygen concentrator, and drugs.

On the other hand, twelve district hospitals are located to at least one for each district. However they does not necessarily fit in well with the distribution of population. Especially, in case of Songinokhairkhan district, the population grows rapidly due to influx from other aimags to "Ger" areas and the number of hospital beds per capita is quite small. Renovation of Songinokhairkhan district hospital is suggested in the 4th HSDP.

(2) Medical Facilities

Most of the AGHs have sufficient space condition since they are the top health care facilities at aimag level. Their main problems is aging of facilities just like the RDTCs. However, they carry out renovation, extension and interior renovation as needed if they have budget. About district hospitals in UB, only hospitals in sub-urban area has satisfactory level of facilities as a hospital. Thus, ADB plans a renovation project of these district hospitals, so that such problems are expected to be solved gradually.

The AGHs have rather serious problems in electricity, water supply and drainage. For example, many of dental departments let patients spit out water to buckets because they cannot discharge water through dental chairs. This shows that they do not always appropriately install equipment after establishment of the hospitals. The district hospitals are in the similar situation as well.

(3) Medical Equipment

Major and popular medical equipment in Mongolia is physiotherapy equipment. This is because traditional medicine, of which main component is physiotherapy, is most popular treatment, and

physiotherapy equipment may be procured at relatively low costs from the CIS countries.

Core medical equipment for secondary medical care, such as ultrasound apparatus, ECG and conventional x-ray apparatus are also widely introduced in AGHs and district hospitals. Laboratories mainly use high pressure steam sterilizers rather than dry heat sterilizers. It is also assumed that they also have fluoroscopic x-ray apparatus in addition to conventional x-ray apparatus. However, a proper method of use is not always applied. For example, fluoroscopic x-ray apparatus is used sometimes for chest x-ray examinations instead of conventional x-ray apparatus.

As for usage frequency of the equipment, many of the AGHs seem to run x-ray apparatus 5-10 times per day and ultrasonograph 10-15 times per day. The number of patient monitors is large compared to the number of operating tables so that they are likely to be used less. Around 70 % of equipments function without any failure.

In terms of types and quantities, medical equipment of the AGHs is more organized compared to those of the district hospitals. It seems that there is no remarkable difference in provision of medical equipment between at RDTCs and at AGHs. In fact, the standard of medical equipment does not show the quantity of equipment, and this makes unclear the difference between RDTCs and AGHs. It may need to find optimal number of medical equipment in each hospital level from the aspect of cost-effectiveness of operation and maintenance.

4-3 Primary Health Care Facilities

FHC in UB and aimag capitals, and SHC and ISH in soum are defined as the primary health care facilities respectively. In bagh located far from the soum center, the bagh health post is established and sometime feldshers offer medical and health services.

These facilities are responsible for health promotion and prevention, such as enlightenment activities to community, immunization, health checkups for children and pregnant women. As for primary health care, they offer initial diagnosis and early treatment by interviews and examination and refer their patients to upper level hospitals if necessary.

Soum Hospital Organization and Operational Standard is enacted in 2001. However, substandard facilities seem very limited. According to Health Indicator 2011, only two of thirty one Grade I SHCs meet the Standard for the numbers of doctors. Some of Grade II SHCs also does not meet the Standard for the number of doctors.

ISH is required to have physician, surgeon, pediatrician, obstetricians & gynecologist, dentists and family doctor (at least one family doctor per 1,000-1,500 inhabitants are required for patrolling medical treatment) and to have more medical equipment than SHC can have. However, one visited ISH in Khuvsgul aimag does not meet the Standard at all.

Primary health care facility in Mongolia lacks x-ray apparatus or clinical laboratory, which may cause insufficient initial diagnosis of tuberculosis, one of the major communicable diseases. In addition, they established a policy in 2008 that doctors with career of 1-1.5 years after graduation of medical school are required to work for the primary health care facilities, which may allocate less clinical experienced doctors,

who does not understand sufficiently the fundamental role of primary health care, to primary health care facilities and cause deterioration of a level of medical care.

1) FHCs in UB

Many of FHCs of Songinokhairkhan district were established in 2001 when FHC system was introduced. One FHC covers an area with about 10,000 population, where the furthest inhabitants are located 28km away from FHC and can visit FHC by bus. These FHCs offer health care services such as prenatal and antenatal care, immunization, health checkups for children aged eighteen or younger, home-visit for elderly persons, outpatient treatment, emergency care, certification of disability, school health and health education. The number of patients is approximately 200 per day and staffs assigned are 4-5 doctors and nurses generally.

2) FHCs in Aimag Capitals

Many of FHCs in aimag capitals were established in 2001. They cover an urban area of aimags with a population of around 5,000-10,000. It usually includes tenement areas and ger areas, and 60% of households are estimated poor. They cover areas within 15 minutes by car or 1 hour on foot. FHC in a aimag capital provides medical services similar to those in UB, despite of more popular domiciliary visit compared to UB. Medical staffs consist of several doctors, nurses and feldshers as well.

3) Soum Health Center (SHC)

SHC has 5-10 beds on average. A large SHC has 20 beds, 4 rooms segregated by sex and even a post-natal recovery room. The number of outpatients at SHC is 5-10 per day. While most of patients visit SHC, SHC sometimes makes a domiciliary visit to villagers in a remote area far from SHC. Actually, the furthest household is located about 200 km from SHC.

SHC provides medical care such internal medicine, surgery, prenatal and postnatal care, and vaccination, which includes delivery, abortion and simple operation differently from FHC. However, resident general doctors have to do everything because of no obstetrics and gynecology specialist at SHC.

4) Intersoum Hospital (ISH)

ISH is required to offer medical services at an intermediate level between SHC and AGH. However, the range of medical services offered at ISH is almost same as that of SHC despite that the numbers of beds and medical specialists of ISH exceed those of SHC.

ISH usually has delivery rooms, a clinical check laboratory, and dentists. Main medical equipment of ISH are ultrasound apparatus, physiotherapy, vaccine cold chain, etc.

4-4 Private Hospitals

(1) Overview of Private Hospitals

Many of private hospitals are located in UB. Most of them are smaller than the tertiary hospitals, having around 100 beds. The number of private hospitals including those without wards is reported officially almost 1,000. Currently, regulations are being materialized, which may include a strengthening of MOH's authority to direct consolidate private hospitals. For example, in future, MOH will strengthen its guidance on consolidation of private hospitals and private hospitals are required to have more than 15 beds for their operation as hospital and accept public insurances.

(2) Medical Equipments

Medical facilities owned and operated by a distributor of medical equipments are equipped with adequate medical facilities and can provide with diagnosis and treatment using such as endoscopy and ultrasonography, to outpatients in an expeditious way compared to public hospitals.

5. Health Status

A scheme to provide basic health services including checkups for children and pregnant women as well as vaccinations is established in Mongolia. Both soums in aimag and khorooos in UB provide such basic health services for citizens registered with the health centers under their jurisdiction. In reflection of the fact that many developing countries have yet to establish such a system, Mongolian scheme to provide basic health services is well developed and this is a good remnant of so-called semashko model, centralized hierarchical health care facility in the Soviet Union. However, in other words, it is difficult to see the situation of unregistered people and they are likely to be left outside the scheme.

As a means to grasp national health conditions briefly, health status of children and pregnant women is used as indicators. In Mongolia, both the child and maternal mortality rates have decreased steadily since 1990. This is mainly because the health checkups for pregnant women and children and vaccinations are provided as programmed.

Furthermore, as the vaccination rates become higher, the occurrences of communicable diseases subject to the vaccination have decreased. Main communicable diseases of concern are tuberculosis, hepatitis and sexually transmitted infections (STIs). Instead, patients who suffer such non-communicable diseases as lifestyle diseases are increasing and the country faces the challenge of tackling these diseases by prevention, early diagnoses and treatment.

Looking at the maternal and child health and disease control in Mongolia, the scheme to provide basic health services is established to some extent and citizens also have the practice to go to hospital when they have a health problem in spite of bad access. However, some problems of the service providers were discovered in the survey, particularly in interviews: quality of health care services remains low and health care services may not be provided to the vulnerables including the poor and those who are not registered.

Issues of maternal and child health, communicable diseases, nutrition, non-communicable diseases, and injuries are described below in detail.

5-1 Maternal and Child Health

In response to the MDGs, a parliamentary resolution sets a target levels of the infant (aged below 1) mortality rate and the under-5 mortality rate to drop below 15.0 and below 21.0 per 1,000 live birth, respectively, by 2015. The infant and under-5 mortality rates in 2011 were 16.3 and 20.0, respectively. In 1990, the under-5 mortality rate was 107 and the decline rate from 1990 to 2010 is 70%. Although the decline rate in East Asia and Pacific has also improved very quickly in the world, the average is 56% and that of Mongolia exceeds it.

The maternal mortality ratio has fluctuated for the last several years and that in 2011 was 48.2 per 100,000 live birth. The average rate in the East Asia and the Pacific has declined from 210 in 1990 to 82 (both per 100,000 live birth) in 2010 and the decline rate is a little faster in Mongolia.

According to the State of the World's Children 2009 issued by the United Nations Children's Fund (UNICEF), improvement of maternal and child health requires 1) enhancing nutrition, 2) antenatal care, 3) skilled attendance at delivery, 4) emergency obstetric and newborn care, 5) post-natal care, 6) newborn care, and 7) integrated management of newborn and childhood illness. The situation of Mongolia is described in accordance with these points.

(1) Enhancing nutrition

Anemia of pregnant women and low birth weight in the newborn are recognized as global health problems. The average from 2006 to 2010 of low birth weight in the newborn account for 15% across the world, 11% in the East Asia and the Pacific and approx. 10% in Japan. The percentage of pregnant women with anemia is said to be 42% in the world and 15% in Japan, according to Worldwide Prevalence of Anemia 1993-2005, WHO Global Database on Anemia.

In Mongolia, the national average rate of pregnant women with anemia has declined as follows: 11.5% in 2007, 11.6% in 2008, 7.9% in 2009, 8.1% in 2010 and 6.6% in 2011. The national average rate of low birth weight in the newborn below 2,500 grams has changed little since 2007 between 3.5% and 3.9% (5-year average is 3.8%). By aimag based on the statistics in 2011, the percentage of pregnant women with anemia is the highest in Bayan-Ulgii at 22.1%, followed by Dornod at 16.9%. The 5-year average from 2007 to 2011 of the two aimags is also high at 23.8% and 14.7%, respectively. As for the rate of low birth weight in the newborn, no aimag shows any significantly high rate. In 2011, the highest is Gobi-Altai at 5.8% (5-year average from 2007 to 2011 at 5.4%), followed by Uvurkhangai at 5.1% (5-year average at 4.9%). There is no correlation between the rate of pregnant women with anemia and low birth weight in the newborn in the five-year average by aimag.

On the UNICEF website, there is comparison of ratio of low birth weight in the newborn (average from 2006 to 2010) between 20% of the poorest segment of the population and 20% of the richest. In Mongolia, the rate among the poor is higher by 280% than the rich. The gap is bigger than the average rate in the East Asia and the Pacific, which is 190% higher. This implies the impact of the gap between the poor and the rich on the low birth weight in the newborn.

(2) Antenatal care

Although the antenatal care (ANC) rate differs by aimag and year in Mongolia, the rate of women who attended ANC 6 times and more accounts for more than 80% for the last five years and the national average in 2011 is 82%. Also, a total of 85.5% of pregnant women attended ANC in the first three months of pregnancy across the country.

The international comparison of ANC attendance shows the high rate of Mongolian pregnant women. The WHO encourages pregnant women to attend ANC 4 times or more and thus the statistics are of women who attended ANC 4 times and more. Because the statistics of Mongolia shows the rate of pregnant women who attended ANC 6 times and more, the data cannot be compared as it is, the rate of pregnant women who attended ANC is 56% across the world, 52% in the Asia, and 79% in the East Asia and the Pacific.

One of the main reasons of the high rate in Mongolia is that such primary health care facilities as SHCs and FHCs have good understanding of households under their jurisdiction. For example, in Uvurkhangai aimag, soums have data of 97% of infants and 88% of children aged between 1 and 5 permanently in spite of the fact that more than 50% of households live in rural areas.

(3) Skilled attendance at delivery

One of the major achievements in maternal and child health care associated with high rate of delivery by skilled birth attendance. The delivery rate at health care facilities in Mongolia has been over 99 % since 2006. One of the high rate is the presence of the maternity rest house (MRH), building attached to delivery facility where pregnant women living far from there, herders, for example, can stay for 14 days before and after childbirth. Beds and meals are provided free of charge in principle. Medical doctors tell pregnant women in rural areas when to come to the MRH based on the expected delivery date in the last ANC. As of 2011, there are 339 MRHs across the country (including 303 in SHCs and 22 near AGHs).

When a pregnant woman dies, maternity death review (MDR) is held at the aimag level first and then at the national level. The ministerial order No. 190 of 2005 stipulates that all maternity deaths be reported to the aimag health department within 24 hours after the death and then reported to the MOH. In the MDR, the place and cause of death, whether it was preventable or it was inevitable, and what should be done to prevent it if it was preventable are discussed.

In the Workshop on the Country Accountability Framework and Development of Roadmap on Women's and Children's Health (jointly held by the MOH and such donor organizations as WHO, UNICEF, the United Nations Population Fund: UNFPA, World Vision, ADB, and Save the Children) in May 2012, MDR result of 34 deaths across the country in the previous year was reported. There is also the record of 277 cases of dangerous childbirths although they were not fatal--168 cases were bleeding, 57 cases were infections, and 99 cases were high blood pressure.

(4) Emergency obstetric and newborn care

In accordance with the criteria to determine pregnant women with some risks in childbirth including

primiparity, late childbearing, and pregnant women with diseases, applicable pregnant women are advised to give birth at health care facilities of secondary or higher level in principle. According to 2011 statistics, 88% of pregnant women gave birth at such health and medical facilities where they can provide such emergency obstetric care as caesarian section, blood transfusion, and newborn resuscitation. According to the UNICEF international comparison from 2006 to 2010, the hospital delivery rate is an average of 79% in the East Asia and the Pacific and an average of 93% in the CEE/CIS where the hospital delivery has become common practice. The high rate in Mongolia is believed to be the influence of the health system of the former Soviet Union. However, MDR points out details of maternity death and neonatal mortality show big possibilities of saving their lives through skills improvement of secondary-level health care facilities.

(5) Post-natal care

As for postnatal checkups, mothers are discharged after staying at a hospital or MRH and then staff of primary health care facilities under the jurisdiction visit their home for checkups once a month. The percentage of mothers who receive a postnatal checkup within 42 days after childbirth is increasing year after year at 77% in 2007, 78% in 2008, 84% in 2009, and 88% in 2010 and 2011.

As for the causes of infant and under-5 mortality across the nation, certain conditions originating in the prenatal period, diseases of the respiratory system, and congenital malformation account for 49.8%, 20.7%, and 12.3%, respectively, for the infant mortality. As for the causes of under-5 mortality, diseases account for 87.8% and injury, poisoning and certain other consequences of external causes account for 12.1%.

As for the mortality rate by the number of days after birth in the case of children at hospitals under the jurisdiction of UB health department, of all the 151 deaths of children under the age of five, deaths before the first birthday account for 86.8% and neonatal mortality within one month after birth account for 58.3%. Of the neonatal mortality, early neonatal mortality within one week after birth account for 98.9%. Similarly, as for the child mortality by the number of days after birth of children at hospitals under the jurisdiction of the MOH, of 398 deaths under the age of five, infant deaths account for 80.2% and neonatal mortality within one month after the birth account for 50.8%. Of the neonatal mortality, early neonatal mortality within one week after the birth account for 79.2%.

(6) Newborn care

Breast-feeding is practiced widely in Mongolia. The percentage of newborns who were given breast milk within one hour after birth accounts for 93.0% across the country in 2011.

(7) Integrated management of newborn and childhood illness

The integrated management of newborn and childhood illness was implemented in 2002 as a national policy. This comprehensive management of childhood illnesses has enabled tackling of diseases of the digestive system and the respiratory system to help lower the child mortality rate. As for the average from 2006 to 2010, 63% of children under-5 received proper health services when there was a possibility of having pneumonia, the percentage of under-5 with suspected pneumonia receiving antibiotics was 71

and % under-5 with diarrhea receiving oral rehydration was 47. Compared with the average of neighboring the East Asia and the Pacific, the percentage of children receiving health services are almost the same and the rate of receiving oral rehydration is slightly lower. However, Mongolia is ranked 6th as for the % under-5 with suspected pneumonia receiving antibiotics among 67 countries of which data is available.

In Mongolia where the literacy rate is high, the maternal handbook, that is distributed when pregnancy is confirmed, is used as record of pregnancy, childbirth and childrearing by mothers and health professionals.

The regional gap of the pace of improvement of maternal and child health indicators and the current conditions is examined based on the infant mortality rate. The average of infant mortality rate per 1,000 live birth from 2001 to 2006 and from 2007 to 2011 is compared by aimag. Darkhan-Uul, Dornod, Orkhon, Selenge, and Gobisumber aimags recorded a decrease by 40% to 50%. Bayankhongor, Umnugobi and Khovd aimags and UB showed a decrease by 20% to 40%. On the other hand, the infant mortality rate has increased in Arkhangai, Gobi Altai, Uvurkhangai, Tuv, Uvs and Khuvsgul aimags.

The five-year average infant mortality rate per 1,000 live birth from 2007 and 2011 is the highest is in Khuvsgul at 29.1, followed by Uvs at 28.9%, and Uvurkhangai at 27.7%. In an attempt to identify the causes of infant mortality by aimag, multiple linear regression analysis was conducted in the stepwise procedure based on the following condition: infant mortality rate (5-year average from 2007 to 2011) as the objective variable and the percentage of pregnant women who attended ANC 6 times and more per population of each aimag (average from 2007 to 2011), rate of pregnant women with anemia (average from 2007 to 2011), percentage of literate women 6 aged and more (2010), rate of newborn with low birth weight (average from 2007 to 2011), rate of delivery at second level health care facility (2011), and rate of herders household (2010) as explanatory variables. The result showed the two factors, rate of herders household ($p < 0.001$) and rate of newborn with low birth weight ($p = 0.004$), are significant and the R² value of the two factors is 0.67 (82% value is accountable). This implies that the factors--living style of herders (physically demanding labor condition, harsh natural environment in winter, and delay of attending ANC and visiting hospitals for delivery in busy birth season of livestock animals) and low-weight birth and death of such babies due to nutritional deficiency of mothers—are seen in aimags where the infant mortality rate is high.

5-2 Communicable Diseases

After the shift of trend of illnesses in 1990, communicable diseases are no longer major causes of death or major illnesses in Mongolia. However, STIs and viral hepatitis that each accounts for approx. 30% of all communicable disease and tuberculosis that accounts for 10% are not on a decline trend as described later. As for the morbidity rate of these diseases per 10,000 population in 2011, syphilis is 15.3, gonorrhea is 18.6, viral hepatitis is 52.8, and tuberculosis is 14.3.

In 2011, a total of nearly 43,000 cases in 31 types of communicable diseases were reported across the country. As for the composition, seven types of enteral infections—hepatitis A, dysentery, food poisoning, salmonella, typhoid, diarrhea, and hand-foot-and-mouth disease—account for 40% (nearly 80% of it is

hepatitis A), respiratory tract infections including tuberculosis, scarlatina, meningitis, chickenpox, rubella and mumps account for 20%, and STIs including syphilis, gonorrhoea and trichomoniasis account for 30%. A total of 150 deaths caused by communicable diseases are reported nationwide.

Communicable diseases subject to vaccinations are tuberculosis, polio, diphtheria, pertussis, newborn tetanus, measles, hepatitis B, Haemophilus influenzae type B (Hib) meningitis, mumps and rubella. As for the vaccination rate has been high based on 2011 data--98.8% for BCG, 99.2% for polio, 98.1% for measles, mumps and rubella, 96.2% for Hepatitis B, and 98.9% for diphtheria, tetanus, pertussis, Hepatitis B, and pneumococcus.

Vaccination for Hepatitis B was gradually introduced locally in 1991 and periodical vaccination became prevalent by 1996 across the country. Seven years later in 2003, the occurrence rate of such communicable diseases dropped significantly up to today. Although one possible source of infection is maternal infection, no survey on such infection has been conducted, according to the MOH.

As for Hepatitis A, vaccination was included in regular schedule on January 1, 2012, and it was carried out in UB and 12 aimags as of May of the year. It is planned to be carried out in other aimags in stages. According to the assistant director of the National Center for Communicable Diseases, it is the vaccination as a short-term emergency measures to prevent prevalence of Hepatitis A and disease should be prevented through the improvement of sanitary conditions and thus the country intends to continue to exert its efforts also in health education.

As for measles, since the introduction of vaccination in 1973, the occurrence has decreased although there is an outbreak once every 5 to 10 years. No outbreak has been reported since 2003 when the vaccination rate became stable at around 98%.

As for polio, no occurrence has been discovered since the 1990s. The country has maintained high polio vaccination rate also since the Certification of polio eradication by the WHO in the Western Pacific Region in 2000.

As for diphtheria, since the introduction of immunization of the diphtheria-pertussis-tetanus (DPT) vaccine in 1967, the number of occurrences has declined. Although it sometimes occurred until around 2002 when the vaccination rate was unstable between 70% and 95%, there has been no outbreak since 2003 when the rate became stable exceeding 95%. Currently, vaccination has continued to be carried out as penta-vaccine.

As for occurrences of other communicable diseases after 2006, there is no record of occurrence of pertussis and the rate of rubella was 0.03 and 0.04 per 10,000 population in 2009 and 2010, respectively, below the target of 1 per 10,000, although there was an outbreak in 2007.

However, tuberculosis remains to be a problem. With regard to the WHO target of case detection rate (75% or over) and the target rate of completion of treatment (85% or over) that are used as a guide for Mongolia, it achieved 83.5% and 88.2%, respectively, in 2009. However, it is hard to declare that the number of newly infected patients has decreased and it remains to be a problem to be tackled.

5-3 Nutrition

As described in the section of Maternal and Child Health regarding the child nutrition, there is no problem related to nutritional programs to be pointed out as a result of breast-feeding up to six months after birth and nutritional guidance at child checkups until the age of five. However, because micronutrient deficiency was pointed out, World Vision, an international NGO, had distributed the Child Nutrition Package that contains vitamins and other micronutrients. Currently, the Government of Mongolia purchases the package with the national budget and distributes it to undernourished children. Malnutrition of children in poverty due to the widening gap between the rich and the poor is also pointed out. One of the purposes of the Mongolian Human Development Fund mentioned in the section of Health Insurance is to assist the poor purchase food. However, it was pointed out that they spent the financial aid to purchase alcohol. As a countermeasure, food coupons for the poor are distributed by the Ministry of Social Welfare and ADB.

As for the chronological changes of underweight (weight to age), stunting (height to age) and wasting (weight to height) of children under the age of five, all figures have declined. Although the rate of stunting that is an indicator for chronic malnutrition is high in Mongolia, in international comparison, the five-year average rate of underweight, stunting, and wasting in the East Asia and the Pacific from 2006 to 2010 show a similar trend at 5%, 19%, and 6%, respectively.

According to the UNICEF Multiple Indicator Cluster Survey 2010 in Mongolia, stunting shows regional gap (higher in the western region) and the gap between the rich and the poor (higher in the poor).

The number of herders in Mongolia decreased from 410,000 in 2001 to 330,000 in 2010 and the rate of urban population in 2010 was 63%, according to Mongolian Statistical Yearbook 2010. Herders have long received nutrients most appropriately in the natural environment as they consume vitamins and other micronutrients from the internal organs of livestock animals without consuming vegetables or fruits and consume microbes and energies from dairy products. However, they have come to settle permanently in the course of urbanization and their diet has been also westernized. As a result, main nutritional problems they face are obesity and children's oral health.

5-4 Non-Communicable Diseases

The sanitary environment has improved, income has increased, and death (particularly that of children) caused by diseases of the respiratory system and digestive system, including pneumonia and bacterial diarrhea, has decreased as a result of social development since 1990. Also as a result of ageing of the population and changing lifestyle as a growing number of people began to settle, non-communicable diseases instead of communicable diseases have come to draw attention as a health problem in Mongolia.

According to the international comparison of the mortality rate caused by non-communicable diseases per 100,000 population based on the WHO data, that of Mongolian male is 868, ranked 150th, and that of female is 569, ranked 119th, both among 193 countries. The mortality rate of non-communicable diseases tends to be high in former Soviet Union countries. Various research has been conducted on the high mortality rate of non-communicable diseases among Russian male and it is pointed out that the cause of death of cardiovascular diseases and injuries has strong correlation with alcohol consumption. Alcohol

consumption among male is also a social problem in Mongolia and it implies that it is one of the factors of the high mortality rate caused by non-communicable diseases.

Disease morbidity is increasing year after year. Morbidity in 2011 per 10,000 population is 1048.2 for respiratory infection, 953.2 for diseases of the digestive system, 766.4 for diseases of the genito-urinary system, 752.1 for diseases of the circulatory system, and 491.5 for injuries, poisoning and certain other consequences of external causes.

5-5 Injuries

Death caused by traffic accidents and injury, poisoning and certain other consequences of external causes has increased recently as a result of road development and prevalence of vehicles. Injuries have become the third most frequent cause of death and, particularly, traffic accidents have been recognized widely as a social problem in Mongolia. Vitalization of economic activities has led to an increase in vehicles in urban areas and road pavement outside UB has led to an increase of vehicles driving at high speed. As a result, the number of traffic accidents has increased to reach around 6,000 per year in UB. Injuries and burns are also increasing among children. Some aimag health personnel pointed out that it is because of an increase in the number of families, particularly poor families, that cannot take appropriate care of their children because they are busy working or because they are divorced and single-parent families.

One feature of death caused by injuries, poisoning and certain other consequences of external causes is that the number of male is extremely higher. The mortality rate per 10,000 population in 2011 among male is 3.25, which is fourfold compared with that among female at 0.76. Deaths caused by murder among male is 1.78, which is five times as many as that among female at 0.34, and the number of suicides among male is 2.76, 5.4 times as many as that of female at 0.49. Among male, the mortality rate aged between 20 and 44 is particularly high. Injury, poisoning and certain other consequences of external causes are the most frequent cause of death of male in the age group.

6. Human Resources in Health and Medical services

6-1 Human Resource Development Policy and concerned Laws and Regulations

The Health Sector Human Resource Development Policy 2010-2014 was formulated in accordance with the National Comprehensive Development Policy based on MDGs, the Government's Plan of Action for 2008-2012, and WHO The Western Pacific Regional Office (WPRO) policy on "Human resource development policy" (2006-2015). More importance is placed on the enhancement of human resources system, linking the health needs and development of medical professionals, enhancement of incentives for medical professionals, construction of proper skill mix in medical practice, and improvement of sense of ethics among medical professionals.

Concerned laws and regulations include the medical service law, labor law, citizen service law, education law, higher education law, anticorruption law, industrial safety and health law, and professional education and training law. Cabinet orders, orders of the Intersectoral Coordinating Committee on Health Sector Human Resource, health ministerial orders, joint ministerial orders, and national standards are produced

and issued as needed.

All the human resources development in the health sector is carried out by higher education institutions including bachelor programs and programs of shorter period. The bachelor programs are offered in such courses as medicine, dentistry and pharmacy. License examinations can be taken at the diploma level for other medical professions.

The Ministry of Education is in charge of the curriculum from the entrance examination to graduation. The State Implementing Agency of Health is in charge of all the matters related to medical professions, including license issuance and after registration. University curriculum are established in accordance with the standard of the Ministry of Education. Higher education institutions are required to receive accreditation study after internal inspections every several years conducted by the National Council for Educational Accreditation. One problem related to establishment of universities is that the MOH is not capable of taking the initiative.

The MOH and State Implementing Agency of Health are coordinated by the Intersectoral Coordinating Committee on Health Sector Human Resource chaired by the Prime Minister, established in 2007. The policies are implemented by the State Implementing Agency of Health, UB city health department, aimag health departments, and tertiary medical facilities in UB through the Department of Public Administration and Management of the MOH.

The academic degrees and professional licenses are separated. As for the academic degrees, diploma can be obtained after the completion of school curriculum of two years or longer and a bachelors degree can be obtained after the completion of university program of four years or longer. Masters' and doctorate degrees can be obtained after the completion of graduate school programs and the graduation thesis achieving a certain level of academic performance. The education and academic degree certification are both conducted within the framework of universities and placed under the jurisdiction of the Ministry of Education.

As for the professional licenses, the State Implementing Agency of Health grants four kinds of license—medical doctor, pharmacist, nurse and midwife. Each licensing examination can be taken by those who have graduated from faculties of medicine, dentistry, or traditional medicine. Other licensing examinations can be taken by those who have graduated from a curriculum of each profession. All the examinations consist of multiple-choice questions. When examinees pass the national examination of each profession, they are registered as licensed professionals automatically. The State Implementing Agency of Health also gives the examination for specialist doctors while they certify training programs of those in various expertise. It also collects and evaluates statistics related to medical professionals. The national certificate license is valid for five years and they need to be recertified thereafter. As to medical doctors for the first two years, after mandatory posting program in primary care facilities was implemented (described in detail later), they need recertification at the timing of two years after the graduation.

6-2 Labor Cost and Health Budget

The Health Indicators 2010 show that 100 billion MNT, or 40%, of 250 billion MNT of the health budget is allocated to the labor cost that includes salary and bonus. Since 2006, salary and bonus per employee

have raised (no consideration is given to such factors as inflation rate) in addition to the increase in the number of health and medical professionals. Salary and incentives for medical professionals have been improved based on the view in the health policy that their treatment is too low from the viewpoint of social security.

The Health Science University of Mongolia (HSUM) and some other higher education institutions receive no government subsidies and thus they need to depend on tuitions from students to finance labor cost of teaching staff and other cost. Because the teaching staff of higher education institutions were not given any pay raise described above, such institutions have an intention to increase the number of students.

6-3 Types and Quantity of Medical Professionals

A bachelors degree is required to be certified as a medical doctor, traditional medical doctor, dentist, pharmacist, dental hygienist and physical therapist and a 3-year advanced diploma is required to be certified as a nurse, midwife, assistant doctor, dental technician, clinical laboratory technician, radiation technologist, and pharmacological assistant.

The number of health and medical professionals totaled 41,124 in 2011, which include 717 in management, 7,943 physicians, 1,284 pharmacists, 9,420 nurses, and 723 midwives, according to the Health Indicators 2011. Main features of each profession is summarized below.

(1) Doctor and related professions

The number of doctors per 100,000 population is 280, which is equivalent to advanced countries. However, the figure includes dentists (19/100,000 population) and traditional medicine doctors (13/100,000 population). There is no career difference between traditional medicine doctors and doctors who completed western medicine at the beginning as both are assigned to primary health care facilities just after graduation. Although the traditional medicine programs were discontinued temporarily after the collapse of former Soviet Union, they came to be officially recognized later (Klitter et al. Sci Pharm 2008).

In 2010, there were 2,589 assistant doctors: 1,070 working at bagh health posts and remaining 1,519 assisting work of doctors.

(2) Pharmacist and related professions

A four-year bachelors' degree is required to be certified as a pharmacist. Of pharmacists, 63% work at pharmacies and 18% work to supply drugs and at pharmaceutical companies. Not so many pharmacists choose to work at a hospital.

A three-year diploma is required to be certified as a pharmacological assistant. There are more pharmacological assistants 60% than pharmacists. Their main duties at hospitals include preparation of injectable formulation.

(3) Nurse, midwife and related professions

A three-year program is required to become a certified nurse. The ratio of the number of nurses to

doctors is 1.3, which is considered to be too few for the number of doctors, according to the Human Resource Development Policy 2010-2014. Another problem is also pointed out that nurses spend only 25% of their work time on nursing, being too busy compiling various records (according to comment on the result of Time Use Research given by personnel in charge of implementing the 3rd and 4th ADB HSDP).

One is required to complete a three-year curriculum to become a midwife similar to nursing curriculum. As the term implies, they assist childbirth. No significant increase is expected.

One-year curriculum is required to become an assistant nurse. They mainly assist nurses.

(4) Other professions

The 1,293 paramedicals in the Health Indicators 2011 include 196 dental technicians, 931 clinical laboratory technicians, and 166 radiation technicians. Dental technicians mainly work at medical facilities that have dentists and most clinical laboratory technicians and radiation technicians work at a hospital.

Other workers in the health sector include driver, security guard, office workers, and cleaning staff.

(5) Female medical professionals

One of the features of human resources in health sector in Mongolia is high percentage of women. They account for 79% of doctors, 92% of pharmacists, and 98% of nurses. No problem has been pointed out on this matter.

(6) Planning of numbers of major health professionals

In consideration of the above, the Health Sector Human Resource Development Policy 2010-2014 describes the necessary number of medical doctors, pharmacists, nurses and midwives and a development plan to secure the human resources. The plan says nurses will be increased, but the numbers of other health professionals should be plateau. However, the number of medical students have not been controlled since the Health Sector Human Resource Development Policy was issued.

6-4 Human Resources Allocation Plan and Actual Allocation

(1) Trend of medical professions and health care facility level

The data of Health Indicators from 2006 to 2010 was analyzed. The number of doctors has increased gradually. Although the number of doctors working at secondary facilities have changed little, those working at primary and tertiary facilities have increased. As for pharmacists, those who work at secondary and tertiary facilities have increased, which shows the expansion of such work in a hospital as drug management and preparation. Clinical laboratory technicians working at primary health care facilities have increased rapidly. The numbers of nurses working at tertiary health care facilities and midwives working at secondary and tertiary health care facilities are increasing.

(2) Number of doctors and nurses at primary health care facilities by aimag

Securing doctors and nurses in rural areas remains difficult. However, doctorless SHC became zero in

2011 although there were eight in 2008.

This shows that doctors tend not to go to SHCs in Dornod and other aimags in remote areas. There are five aimags where the ratio of physician to nurse is less than 1 to 2—Darkhan-Uul, Orkhon, Uvurkhangai, Umnugobi and Tuv. They have big cities and living conditions are good. In other words, doctors tend to concentrate in areas with good living conditions with big cities and thus the number of nurses per doctors become lower.

6-5 Educational System for Health Professionals

(1) Institutions and curricula for undergraduate education

The HSUM is the only national medical university. It consists of seven Schools—Medicine, Dentistry, Bio-Medicine, Traditional Medicine, Pharmacy, Public Health, and Health Technology—as well as three branch schools in Darkhan, Gobi-Altai and Dornogobi. The Schools of Medicine and Traditional Medicine are six-year curricula and School of Dentistry and Pharmacy are five-year curricula. The School of Health Technology consists of Departments of Physical therapy, Nursing, Midwifery, Clinical laboratory technicians, Pharmacological assistants, Radiation technicians, Dental technicians, Nursing for traditional medicine, and Feldsher in traditional medicine. The physical therapy course is a bachelor course and others are diploma courses. In addition, the university offers one- to 1.5-year courses for assistant nurses, caretakers, pathological assistants, optometrists, and medical device operators.

The HSUM has 349 teaching staff, including 31 professors and 45 associate professors, and 57% hold Ph.D. As for enrollment, there are 5,495 students, 116 doctors in training, 637 graduate students in the master's curriculum and 210 graduate students in the Ph.D. curriculum.

The curriculum of HSUM School of Medicine was converted into an integrated curriculum with cooperation from the Groningen University in the Netherlands and Leeds University in the U.K. in 2000 to 2001. Liberal arts education is offered in the first year, basic sciences and health communications are taught in the second year, organ-system-based curricula for clinical problem-solving are offered in the following three years, and students receive practical training in clinical settings in the sixth year. When they finish the second and fifth year, they take objective structured clinical examination (OSCE) for comprehensive clinical skills. In the practical training in the sixth year, students take objective structured procedural examination (OSPE) every half year to assess the whole process of history taking, physical examination, diagnosis, and decision of treatment using simulators.

According to the dean of the School of Medicine, HSUM, current problems regarding medical education are (1) curriculum development and evaluation, (2) students' diagnosis and communication skills, team care, and capabilities of critical thinking and clinical decisions, and (3) training of problem-based and team-based learning for teaching staff. The study team observed the practice training at the First General Hospital. There were as many as 30 students because fourth- and sixth-year students of the HSUM and sixth-year students of the Monos Medical University were participating in the practice training all at the same time. As this shows, clinical practice training before completion of the university curriculum is likely to lack in experiential learning.

The bachelor programs of the nursing and midwifery in the School of Health Technology of the HSUM was no inferior to the international standards. This is also the case in the branch schools in Gobi-Altai, Dornogobi and Darhan.

There are six private medical universities in Mongolia. Ach Medical Institute has a six-year curriculum of medicine and a five-year curriculum of dentistry, among other curricula. Monos Medical University and Otoch Manramba Medical University have six-year curricula for traditional medicine doctors. Ach Medical Institute, Otoch Manramba Medical University, and Ulaanbaatar Medical College have four-year nursing bachelor programs. Etugen Medical Institute and Enkh-orchlon Medical Institute have four-year bachelor programs for medical engineering and social workers, respectively.

The entrance examination is held across the nation and each university assigns two subjects (400 points each) for selection. If their results exceed the score required by each university or department, they can apply for a university. Due to lack of further examination in the next stage, they have to have quite high scores to enter a university.

(2) Postgraduate medical education

Those who have completed a six-year curriculum at a medical school must work at a primary health care facility for two years and then most doctors take specialist training programs for one to three years. After completing the program, they work at hospitals and only some doctors receive retraining.

1) Assignment to primary medical facilities

All medical school graduates are assigned to primary health care facilities for two years after graduation. They are assigned to either FHC (in UB or aimag centers) or SHC (in soums in aimags). Because an FHC has several doctors, working at FHC has a meaning of training for one or two beginner doctors. However, because many SHCs in soums in each aimag are small only with one or two doctors, working there does not serve as training because there is no one to offer training. Although many concerned parties oppose to the scheme, the outcome of elimination of doctorless soums is also an important fact and thus no concrete plan is reported to change the scheme. In the interviews with about 10 young doctors in FHC and SHC, they said that they regard the scheme as provision of labor and that they would like to receive specialist training as soon as they complete the two years.

2) Specialist training

Specialist training programs are offered by 28 health care facilities including tertiary hospitals, specialized hospitals, RDTCs and HSUM. There are 457 programs covering 23 specialist fields, according to the Human Resource Policy for Health 2010-2014. The term of the training is usually one to 1.5 years. Those who achieved a certain level of performance during training and then passed the examination by the State Implementing Agency of Health are qualified to become specialist doctors.

The training period for specialists is quite short when compared with five years that is an average in West Europe. One reason for the shortness is that they are required to pay for the training (approx. 500USD/year),

according to the 4th HSDP, RRP MON 41243. Although doctors in training provide certain labor and receive payment for it in many countries, it is not the case in Mongolia because it is difficult for the Government to earmark the budget for such payments.

There are 32 specialist fields in medicine as of 2011. As for the number of doctors per 100,000 population in main specialist fields for the last 10 years, the numbers of general practitioners and pediatricians have decreased remarkably. Issues related to general practitioners and family doctors are described in detail later. Among medical specialist fields, pathologist, anesthetist, emergency doctor, forensic medicine specialist, and pediatrician are relatively unpopular as they take high risk, have many duties and receive less income and incentive.

3) In-service education

There are two types of in-service education programs—program to advance to subspecialty and other programs. In order to advance to subspecialty, or such specialist fields as cardiovascular or gastroenterological subspecialist within internal medicine, a six-month training is required in addition to the specialist program.

As for the fields of subspecialty among European countries, Italy and Hungary have 43 fields, the biggest, and Germany has 30, the fewest. However, in Mongolia, there are more than 65, according to the 4th HSDP, RRP MON 41243. It is apparently many compared with European countries.

(3) Post-graduate nursing education system

There is no clear post-graduate training or lifelong education system. It is often said that nurses with bachelor degree who have completed a four-year curriculum have more chances of career development, compared with diploma nurses who have completed a three-year curriculum. However, no clear policy or training program has been proposed to tackle the issue. Some nurses become methodologists to perform ward management and other managerial duties.

(4) Issues related to general practitioners and family doctors

1) Analysis of current circumstances

As for 2009, general practitioners account for only 20%, according to the Human Resource Policy for Health 2010-2014. If the functions of primary health care facilities including FHCs and SHCs are considered, the roles of general practitioners are needed. However, a general practitioner means a doctor with no particular specialist training and thus young doctors who are required to serve for primary health care facilities for at least two years are typical general practitioners.

In ADB's 1st HSDP, the term, family doctor, was defined for the first time and the job description has been used. Their duties can be largely divided into (1) providing healthcare, public health and emergency medical services and producing document for it and (2) participation in training and research activities.

Although only 13 doctors have chosen family doctor as the post-graduate specialist training since 1998, there are approx. 800 family doctors across the country (the 3rd HSDP Technical Report, Upgrading of the

Family Medicine Undergraduate and Postgraduate Training Curriculum). Because completion of specialist training as a family doctor does not lead to pay raise and it rather narrows down their future career plan (it is difficult to become a doctor in other specialized fields), motivations to choose family medicine as their expertise and the career path to work at primary health care facilities have lowered significantly (the dean of HSUM School of Medicine).

2) Undergraduate curriculum

A variety of approach of family medicine is being taken for the undergraduate curriculum. Currently, the HSUM and Ach Medical Institute are offering excellent programs (3rd HSDP Technical Report, Upgrading of the Family Medicine Undergraduate and Postgraduate Training Curriculum). Because Monos Medical University and Otoch Manramba Medical University specialized in traditional medicine, they are not counted for this issue.

(5) Educational environment

The campus of the HSUM in UB is situated in two locations. One is the main campus for Schools of Medicine, Dentistry, Bio-Medicine, Traditional Medicine, Pharmacy, and Public Health.

The other campus for Health Technology School is situated in No.6 khoroo in Bayangol district. Although buildings are not new on both campuses, space for renovation and expansion has been conducted effectively.

The clinical practice training for the School of Medicine is conducted at tertiary health care facilities including First General Hospital. HSUM teaching staff has provided clinical services and the gentleman's agreement on clinical education has worked well. However, there is a discussion for the HSUM to pay hospitals for the cost of accepting medical students.

Simulation education is conducted actively in both the main campus and the School of Health Technology and various models and computer-patient simulation were used effectively. The campus of the School of Health Technology has bigger simulation laboratory and a wide range of simulation device.

(6) Improvement of teaching quality

A teacher training program for 45 days is required to become teaching staff at medical departments. The program includes planning for a lecture, curriculum development, teaching methodology and evaluation methods. This system is effective to prevent those who only have research achievements or clinical practice from becoming teaching staff.

As efforts to improve the quality of education, an annual conference of the Mongolian Medical Education Association has been held since 2009 (on April 7 in the case of 2012) and journals have been also published.

6-6 Trend of other Donors and Neighboring Countries

The Inter-sectoral Coordinating Committee on Health Sector Human Resources is chaired by the Prime

Minister, the secretary-general is served by the Minister of Health and the ADB, WHO, UNDP, UNFPA, UNICEF, WB, JICWELS, and JICA are listed as international donors in its structure. However, how the committee meetings are held is unknown.

The ADB has defined the terminology of family doctor, in the 1st HSDP and created a system that enables more efficient human resources planning. In the 3rd HSDP, it is introducing an incentive system in order to enhance the system to develop a wide variety of human resources, including family doctors. Although it plans to reform the entire post-graduate training system in the 4th HSDP, it is still under planning.

The WHO published WHO Country Cooperation Strategy for Mongolia 2010-2015 in which it shows the course to take while working in coordination with international frameworks.

The WB examined the hospital reorganization in UB and its plan in the Mongolia UB Hospital Restructuring Project and it submitted a report in 2003. It had a particularly significant impact on the privatization of soum hospitals and FGPs, previous names of SHCs and FHCs. It has made no major action since then.

As for Korea, Catholic University and some other organizations are implementing assistance projects individually. As a result of the national project to promote medical tourism, it has attracted patients from Mongolia. China is also accepting patients mainly from Inner Mongolia.

Japanese universities have built various relationships individually and are implementing their projects.

7. ADB Health Sector Development Project

7-1 Progress of Aid in Health Sector by ADB

ADB has supported the health sector by sufficient and long term fund in the past ten years. Its supports started as the 1st HSDP and now the 5th HSDP has been being implemented.

The 1st HSDP was composed of improvement of primary healthcare, capital participation by the private sector, rationalization of health care facilities and health professionals, improvement of health finance and management. The 2nd project targeted on improvement in local sectors such as improvement of health care services and qualification of health professionals and health care facilities in rural areas. The 3rd project targeted on improvement of health care services for children, mothers and the poor, and health financing, health insurance and human resource development. The 4th project targeted on activities in UB which population accounts for 50% of the total population, such as improvement of hospital management, systems of trainings for graduation and residents, and safety of drugs. The 3rd and the 4th projects are being still implemented in 2012 and they complement each other.

7-2 The 4th Health Sector Development Project (2011-2016)

Particularly, the 4th project made a proposal on a strategy for improvement of hospital system and is now constructing a model district hospital in the Western Songinokhairkhan district in UB as a demonstration. This proposed strategy mainly focuses on structural improvement of the primary, secondary and tertiary hospitals in UB and self government system of district hospitals which function as secondary hospitals. As

for the tertiary hospitals, since that despite that there are too many specialized hospitals in UB, they fail to offer tertiary special health care services, the project now tries to find out how to scale down these tertiary health care facilities to secondary ones and how the tertiary general hospitals can offer such tertiary special health care services. It is also trying to find a way to transfer the current system where the 1st, 2nd and 3rd general hospitals take in charge of UB, dividing the same to three divisions to the system of five divisions.

On the other hand, according to the proposal, the number of the district hospitals will remain the same, one per each district. However, the proposal recommends them to strength financial operations and powers over human resources and UB health department to transfer management rights and be responsible only for management evaluation afterwards. In addition, they plan to conduct surveys on functions and movements of emerging private hospital sectors.

7-3 The 5th Health Sector Development Project (2012-2017)

Based on the results of institutional development in the overall health and medical area, ADB is now implementing the 5th HSDP focusing on safety of hospitals. This project is composed of components for safe blood supply, management and control of medical wastes, and prevention of in-hospital infection. The current situation of each component is as follows;

(1) Management and Disposal of Medical Wastes

1) Related Policies

A policy related to medical wastes is “National Strategy 2009-2013”. As for the central administration, public health office of MOH takes charge and as for local government, a person in charge of enjoyment of aimag health departments takes charge. Special Inspection Agency of UB and each aimag take charge of environmental audit and monitoring on health care facilities. The main laws and ordinances related to medical wastes are as follows;

- Article 158 of Ordinance of MOH, “Ordinance on Handling Methods of Medical Wastes within Medical Facilities” (promulgated in 2011): This Ordinance includes procedures of segregation, sterilization, transportation and storage of medical wastes at on-site. These provisions do not specify any standard values to be complied. As a result, special regulatory offices of UB and the aimag are not likely to provide concrete values such as deviation from the standard values when evaluating sites despite that they comprehend standard values. Before an amendment to this, nurses of each department collect segregated wastes and bring them to dumps. Currently, appointed persons go round hospitals and collect medical wastes.
- Ordinance of MOH and Ministry of Nature and Environment Article 320 “Ordinance on Handling Methods of Medical Wastes within Medical Facilities” (promulgated in 2011):
As for a method of on-site disposition, this Ordinance provides for only guidelines against medical waste collection operators. It specifies procedures to dispose mainly solid wastes requisite for open dump disposal at final disposal sites.

2) Current Circumstances

Solid medical wastes in the health care facilities are properly segregated into three categories (general, medical wastes, medical wastes in sharp shapes), even at a hospitals with a scale of SHC so that they are never problem. Temporary storages within facilities are segregated from general public.

In Mongolia, general wastes incinerator are not installed so they are generally disposed at dumps. As for medical wastes, private operators of solid medical waste collection collect and sterilize wastes using high pressure large-size hot air sterilizer, and then dispose them at nearby dumps for general wastes only in UB. In other aimags, at facilities at a level of AGHs, they use high pressure hot air sterilizer for sterilization within the facilities or burn the same by incinerators and bring ashes to dumps for general wastes. At facilities at a level of SHC, they dispose medical wastes together with general wastes at waste treatment plants located in the soum.

Sharp solid medical waste such as injectors are segregated and disposed at special boxes. Despite that these are disinfected, their shapes remain the same so that they are disposed at ultimate disposal sites in hazardous conditions such as exposure of disposed needles from boxes. The climate of Mongolia is dry so they have to cover wastes with dusts and firmly press the dusts. Therefore, they apply a land filter method to bury wastes and cover the same with dust. Regardless UB, at disposal sites of each aimag, they seemed not to sufficiently cover the waste with dusts. Under these circumstances, there is a risk that “waste pickers”³ who work at ultimate disposal sites may suffer from infectious disease due to prink by needles. In spite of this, such risk is not subject to a survey.

As for biological wastes, these wastes were brought to cemeteries and buried but disposal methods thereof are being changed according to new laws.

Liquid medical wastes are required to be disposed by chlorine treatment within facilities. Such requirements are likely to be met at the secondary and tertiary hospitals as far as possible. After chlorine treatment, disposed liquid medical wastes are discharged to sewer without any further treatment. At the secondary and tertiary hospitals, chemical analyzers are installed so liquid medical wastes used by such hospitals may be likely to include heavy metals but these hospitals are not likely to handle such problem.

Sewerage treatment section in Dornod has Russian style treatment facilities. At the facilities, they carry out physical treatment such as removal of large sized dirt through mesh screens and removal of sediment of heavy floaters by flushing sewerage slowly, and biological treatment such as decomposition of organic matter by effects of bacteria called activated sludge which is nitrogen elimination. However, they do not carry out chemical treatment procedures which are sterilization of waste water by pouring antiseptic medicine such as chlorine. In addition, polluted mud are just piped up by a pump and then spread to level ground. They do not have incineration facilities like Japan. Waste water is sprinkled to wide drain to let it dry or sink in the ground.

As for disposal of radioactive disposal, since some of hospitals in UB process pictures digitally, so that waste water does not come out. In case of old fashioned developing machines, they flush waste water to

³ Waist Picker: In UB, the number of immigrants to UB for jobs is ten to twenty thousand in annual basis. Many of so called waist pickers are immigrants from rural areas. Waist pickers make a living by picking up garbage from a mountain of garbage collected by truck in UB and segregate recyclable items such as a can, bin and a scrap of iron.

sewerage without any treatment.

3) Performance and Targets

Since there is a problem in performance of the existing high pressure steam sterilizer, it is assumed that ADB will work on the problem in disposal as one of measures against infectious diseases. As one of countermeasures against medical waste, ADB is assumed to mainly carry out seminars on transportation of waste and compliance of standard values in handling of waste within health care facilities.

(2) Safe Blood Supply

1) Related Policies

Main laws and ordinances in relation to safe blood supply are as follows; Approval of the Mongolian governmental policy on provision of supply and safety of donor blood and blood products (Resolution No.45, 2007), Approval of the governmental policy on provision of supply and safety of donor blood and blood (Resolution No.111, 2008), Approving primary registration and reporting forms to be used in blood services (Minister's order No.34, 2010), Approval of guidelines and rules of blood safety (Minister's order No.377, 2010) , Intensify the implementation of blood safety (Minister's order No.388, 2010).

2) Current Situation

In UB, there are National Transfusiology Center next to the First General Hospital and their branch offices. The total number of blood supply centers is twenty one. However, only three centers located in UB, Uvurkhangai and Dornod aimags meet the national standards.

They depend on blood donation by the civil since blood is not traded. The Red Cross collects information on blood donation and carries out enlightenment activities. Center for Blood Transfusion takes charges of production and storage of blood components and blood transfusion.

The number of blood donation is not large so that the blood centers always lack sufficient blood. In addition, the number of equipment for production of blood components is limited so that only a several blood transfusion centers can produce blood components. When collecting blood, doctors examine donors and perform screening of infectious disease (serologic test for syphilis, hepatitis B surface antigen, hepatitis C virus antibody test) and blood tests before blood collection. A volume of blood is 250-350ml per each donor.

They also perform irregular antibody tests and cross-match test, infectious disease tests especially to avoid a risk for blood during a HIV/AIDS incubation period. In the past, two recipients of blood transfusion developed AIDS since HIV virus was not detected in serologic tests since bloods were in the incubation period. In response to this, MOH hurried to introduce polymerase chain reaction test equipment.

3) Record of Performance and Direction

ADB plans to supply equipments to the newly established central blood center which had deteriorated and was small sized, and its production of blood component is limited. It also provides equipments such as

refrigerator for drugs and test equipments to blood transfusion centers of each aimag. It also plans to offer training for human resource development. In particular, ADB puts an emphasis on promotion activities for blood donor, operational skills of polymerase chain reaction, skills of separation sampling method of blood component, serological test on infused blood, maintenance of medical equipment.

(3) Preventive Measures against In-hospital Infection

1) Related Policies

“Audit on In-hospital Infection and Preventive Methods in Medical Facilities” (promulgated in 2011) of MOH Ordinance Article 165

This Ordinance provides for standards to be complied by health professions and collection operators who handle medical wastes as countermeasures against in-house infection. It also provides for countermeasures against expansion of infection after disposal of medical wastes and a system to prevent an accident by person in charge of handling.

2) Current Circumstance

Each AGH establishes a committee for prevention of in-hospital infection which checks the number of accidents for monitoring evaluation. But these committees did not function well. Accidents of pricking by needles frequently occur. These committees are required to report accidents afterward. In case of such accidents, they are required to perform antibody inoculation. The committees carry out trainings for prevention of infectious disease. In addition, as a part of in-hospital infection prevention system, they take measures such as hand-wash, segregation of medical wastes, vaccination for health professions and persons who handle medical wastes.

3) Records of Performance or Directions

According to ADB’s survey, MOH is now planning to establish the central sterilization center for a system where the center collects equipment which need sterilization treatment from private and public health care facilities within UB which do not perform sterilization treatment and then return the same after sterilization. However, realization of the system is deemed to be less likely, considering the current traffic jam within UB.

It also focuses on updating out-of date high pressure stem sterilizers installed in the AGHs to new type. In addition, it is planning to give trainings on hand-washing techniques etc.

8. Health Care Assistance by Other Donors

Led by ADB, UN agencies such as WHO, UNICEF and UNFPA have been assisting Mongolia. In addition, Luxemburg Development Agency recently started assistance as bilateral assistance etc. A scale of assistance is unknown. However, many of assistance are grant aids or technical aid. The following table shows the trend of major assistance by other donors in the healthcare area.

Table 1 Health Sector Projects Conducted by Other Donor Agencies

NO	Project Name	Type	Organization	Duration	Target Area
1	Third Health Sector Development Project 0086 MON (SF)	FA	ADB	Dec. 2007 - Dec. 2013	Arhangal, Govialtai, Dundgovi, Suhbaatar, Tov Aimags, Songnohairhan, Chingeltei District
2	Fourth Health Sector Development Project	FA	ADB	Dec. 2010 - June 2016	Whole Country (Pilot area: Songinohairhan District of UB City)
3	Children's Health, Nutrition	TA	UNICEF	Jan. 2010 - Dec. 2011	MOH, Ministry of Food, Agriculture and Light Industry, NCCD, NCMCH, Aimag and District Health Dept.
4	Improving Access to Health Services for Disadvantaged Groups in Ulaanbaatar	TA	ADB, Japan Fund for Poverty Reduction	Apr. 2008 - Apr. 2012	21, 22, 23, 24 Horoo's Bayanzurkh District, 7, 19 Horoo's Chingeltei District
5	Maintaining HIV low prevalence in Mongolia through the National Prevention, Care, Treatment and Support Programs on HIV/AIDS	FA	Global Fund	July 2011 - Dec. 2013	Nationwide (total population and youth, health workers, MD.S and most at risk population for HIV/AIDS)
6	To improve the quality laboratory services for HIV, AIDS, STI, TB and blood safety through strengthening the National Laboratory Network, the Quality of Health Management Information System and Infection Control	FA	Global Fund	July 2011 - June. 2013	21 Aimags, 9 districts of UB, Enerel hospital and Proion Hospitals
7	Achieving the TB-related MDG targets by 2015 through improving quality of and access to TB services by strengthening DOTS program, infection control and addressing the threats of MDR-TB and the TB-HIV co-infection	FA	Global Fund	July 2011 - Dec. 2013	Whole country
8	Non Communicable disease, Factors	TA	WHO	2010 - 2011	MOH
9	Global Program Reproductive Health Commodity Security	FA	UNFPA	2008 - 2012	Whole country
10	Health Care for Vulnerable People's during Financial Crises	TA	ADB, Japan Fund for Poverty Reduction	Jan. 2010 - Dec. 2012	Whole country
11	Reduce Nutritional Chronic Deficiency of Child	TA	ADB, Japan Fund for Poverty Reduction	July 2009 - July 2013	Area: Arhangal, Govialtai, Dundgovi, Suhbaatar, Tov Aimags, Songnohairhan District, Chingeltei District of UB Organization: UB City Health Dept., State Implementing Agency of Health, Public Health Institute, HSUM, NGO, "New Public Health" and etc.
12	Stroke and Health Infract		WHO, MCA	Sep. 2010 - Sep. 2013	National Central Hospital #1, #3
13	Health Project, MCA	FA	MCA	Sep. 2008 - Sep. 2013	21 Aimags, 9 districts of UB
14	Environmental and Occupational Health	TA	WHO	2011	Area: 26 Soums in 8 Aimags Organization: MOH and relative organizations
15	Program for Cardiovascular Diagnostic Center	FA	Lux-Development	May 2007 - Dec. 2011	National Central Hospital #3, Huvsgul, Dornod, Selenge, Darhan, Ovorhangai, Erdenet, Dornogovi, Hovd, RDTC, Aimag Central Hospital
16	Program for Supporting Distance Diagnosis for Child and Maternal Care	FA	Lux-Development, UNICEF	2007 - 2011	National Central Hospital #3, Huvsgul, Dornod, Selenge, Darhan, Ovorhangai, Hovd, Huvsgul, Zavhan, Uvs Aimags Central Hospitals
17	Project for HIV Prevention for Board Areas	FA	Lux-Development, UNFPA	Jan. 2009 - June 2011	Bulgan Soum of Hovd Aimag, Zamin Uud Soum of Dornogovi Aimag
18	Expanding HIV, AIDS Prevention Programs in Mongolia, Assist and Program: Prevention for Sexual Transmitted Infection: Program for Encouraging Service for Youth	FA	Global Fund	July 2007 - June 2011	"Future Doorstep" Youth Health Centers at Aimag and District Department of Health

FA: Financial Assistance, TA: Technical Assistance

Source: Ministry of Health, Department of International Relations

