Ministry of Health
The Republic of Moldova

FINAL REPORT
ON
PREPARATORY SURVEY FOR
PROJECT FOR IMPROVEMENT OF
MEDICAL CARE SERVICE
IN
THE REPUBLIC OF MOLDOVA

March 2013

JAPAN INTERNATIONAL COOPERATION AGENCY

FUJITA PLANNING CO., LTD.

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PREFACE

Japan International Cooperation Agency (JICA) decided to conduct the preparatory survey for Project for Improvement of Medical Care Service and entrust the survey to Fujita Plannning Co., Ltd.

The Survey team held a series of discussions with the officials concerned of the Government of the Republic of Moldova, and conducted field investigations. As a result of the futher studies in Japan, the present report was finalized.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two contries.

Finally, I wish to express my sincere appreciation to the officials concerned of the Government of the Republic of Moldova for their close cooperation extended to the survey team.

March, 2013

Akihiko KOENUMA
Director General
Middle East and Europe Department
Japan International Cooperation Agency

Summary

Summary

1. Background of the Project

In the Republic of Moldova, economic challenges in the early 90s and deep financial crisis in 1997-98 undermined the activity of the health system. Drastic decreases in public expenditures for health led to interruption or even cessation of part of necessary medical services. In order to prevent a further deepening of the health system crisis, the Government of Moldova (hereinafter referred to as "GOM") initiated a series of courageous reforms, in particular the development of primary health care. GOM has been undertaking the overall sector reforms which include improvement of efficiency of the medical system and upgrading the level of medical services and had certain outcomes.

In 2007, GOM approved the "National Health Policy 2007-2021" and the "Healthcare System Development Strategy for the Period 2008-2017". The "National Health Policy 2007-2021" launched principles which shall guide the legal and statutory framework towards the promotion of health, disease prevention and ensuring access to high quality health services, and formation of a competitive infrastructure, implementation of advanced medical technologies in line with the European standards is described in the "Healthcare System Development Strategy for the Period 2008-2017". Furthermore, "Boost up the reforms; addressing health needs through investment policies, The Policy Roadmap for Moldova" was approved in March 2012 as the action plan to achieve the policy and the strategy. This roadmap is in accordance with the "National Health Policy 2007-2021" and the "Healthcare System Development Strategy for the Period 2008-2017".

On the other hand, the infrastructure for medical services is not sufficient because of the lack of financing. In many medical facilities, much of the medical equipment in use is very out of date and may no longer meet the current requirements. Due to this, introduction of latest medical technologies and replacement of obsolete medical devices has become an urgent challenge because some series of surgical interventions can't be conducted although there are medical staffs with advanced medical technology. It is estimated that approximately 25% of all the equipment in the hospitals is of the Soviet Union era origin. At the same time, up to 80% of all the equipment, regardless of its origin, is morally and physically outdated. For the tertiary health care, sector reform is generally on track but high performance medical equipment is in urgent need. Under these circumstances a request for a loan under Special Terms for Economic Partnership (STEP) condition, for procurement of state-of-the-art medical technologies and replacement of obsolete medical devices, to health facilities in Chisinau including the Republican Clinical Hospital, has been submitted from GOM to the Government of Japan in April 2012.

2. Contents of the Project

Project Purpose

To strengthen the medical care service efficiently in the Republic of Moldova with the procurement of the medical device and laboratory equipment into the 3rd and 2nd level hospitals located in Chisinau which are expected to act in the future as core hospitals in each area.

JICA, with the purpose to investigate present situation of health sector in Moldova, sent a Data Collection Survey team from July to August 2012 and conducted data collection of the whole sector, then dispatched a Preparatory Survey team from September 24th, 2012 to November 12th, 2012, and from December 5th, 2012 to December 24th, 2012. The Preparatory Survey team discussed and confirmed the contents of the request with the Ministry of Health and target facilities, conducted site evaluation and evaluation of contents of the equipment, and developed an outline design of the Project.

2.1 Design Policy

The Project is planned to be implemented under the Japanese ODA Loan scheme with STEP condition. Most of the target facilities are top referral facilities in Moldova. The existing equipment is obsolete and the number is not meeting the demands, limiting the provision of healthcare services, however the condition of equipment of each facility and equipment management are influenced by insufficient budget to procure and renew equipment due to the economic situation in Moldova. Considering the above-mentioned background, the Project has been developed under the policies presented below:

(1) Equipment to be procured under the Project should strengthen medical and healthcare service as top referral facilities.
(2) Equipment to be procured under the Project should be effectively used with current technical level of the medical staff or through short term training.
(3) Equipment to be procured under the Project should be maintainable by the efforts of the Moldovan side.

2.2 Basic Plan

Major planned equipment is presented below:

Target Facility	Planned Equipment
Republican Clinical Hospital	Angiography, Artificial heart-lung machine, Operation theater equipment/facilities, ICU equipment, Emergency laboratory equipment, Blood bank equipment, Medical furniture.
Scientific Research Institute in the Field of Mother and Child Health	Imaging diagnostic equipment, Laboratory equipment, Endoscopes, ICU equipment, Genetic diagnosis equipment, operation equipment, ORL diagnosis and treatment equipment, Audiology equipment.
National Scientific-Practical Centre for Emergency Medicine	Imaging diagnosis equipment, Endoscopes
Oncologic Institute	Imaging diagnosis equipment, Endoscopes, operation theater equipment, ICU equipment
Chisinau Municipal Clinical Hospital "Sfanta Treime"	Imaging diagnosis equipment, Endoscopes, Uro-surgery equipment
National and Regional Center for Public Health	Bacteriology investigation equipment, Food investigation equipment, Soil and air investigation equipment, Electromagnetic investigation equipment, Noise and vibration monitoring equipment, Radiology contamination investigation equipment

Technical Assistances planned in the Project are presented below:

Medical Device	Duration	Training Place	Country of Trainer
CT	1 Week	Moldova	Romania, Ukraine, Russia, etc.
MRI	1 Week	Moldova	
Angiography	3 Weeks	Moldova	
Operational Microscope for brain surgery (The Republican Clinical Hospital)	1 Week	Abroad	Romania, Ukraine, Russia, etc.
		Moldova	
Pediatric Laparoscopy (Mother and Child Hospital)	1 Week	Abroad	
		Moldova	

2.3 Schedule and Cost Estimation of the Project

It is planned to conduct the selection of consultant for the implementation of the Project simultaneously in line with the Detailed Design. Cost for the Detailed Design of the Project is planned to be covered by JICA once the Project is realized. Estimated timeframe until the completion of the Project (procurement, installation and completion of commissioning of the equipment) is approximately 27 months. 39 months is estimated including the warranty period of 12 months.

Estimated project cost is presented below.

(Unit: Million JPY)

Item	Foreign Currency Portion		Local Currency Portion		Total	
	Total	Loan	Total	Loan	Total	Loan
1. Equipment Procurement (installation, tranport, inclusive)	5,348	5,348	0	0	5,348	5,348
2. Related Works	0	0	332	0	332	0
3. Price Escalation	227	227	0	0	227	227
4. Physical Contingency	280	223	0	0	280	223
5. Consulting Services	110	110	19	19	128	128
6. Interest during construction	12	0	0	0	12	0
7. Commitment Charge	11	0	0	0	11	0
8. Land Acquisition	0	0	0	0	0	0
9. Administration Cost	0	0	313	0	313	0
10. Tax (VAT and Import Tax)	0	0	0	0	0	0
	5,988	5,907	663	19	6,651	5,926

Currency Rate: 1US$=79.0JPY, 1US$=12.4 Moldovan Lei, 1 Moldovan Lei=6.4

Price Escalation Rate: Foreign Currency Portion 2.1%, Local Currency Portion 6.2%, Physical Contingency Rate: 5.0%; (Date of Cost Estimation: December 2012)

* Total figure might not equal to the sum due to rounding.

3. Evaluation of the Project

3.1 Relevance

Coverage population of the four (4) National Medical Facilities and the National Center for Public Health is approx., 3.5 million, the entire population of the Republic of Moldova. The Coverage population of the Chisinau Municipal Clinical Hospital “Sfanta Treime” is approx., 0.8 million, the entire Municipal of Chisinau, plus alpha for the services the same hospital offers at Republican level and to the surrounding of the Municipal of Chisinau. The Project aims to improve the quality of healthcare services through a large scale investment for procurement of equipment to replace superannuated equipment and introducing new technologies to the top referral hospital of the Republic, the core hospital of the Municipal of Chisinau, and to the National Center for Public Health which is in charge of national security of the health sector, and is in line with both the “National Health Policy” and “Healthcare System Development Strategy for 2008 – 2017” of the Republic of Moldova, aiming to access high quality healthcare services, and the policy of the Government of Japan which positions “Improvement of medical and healthcare service” as a main development agenda in the social sector which is one of the prioritized aid sectors for Moldova, therefore, it is judged as valid to implement the Project.

3.2 Effectiveness

(1) Quantitative Effect

Operation and Effect Indicator are presented below.

No.	Indicators	Target Facilities	Baseline (Year: 2011)	Target for each facilities (2017) [2 years after completion]
1	Av. Number of days of hospitalization for Patients with Endoscope intervention	MCH	5.4	4.0
		CNSPMU	4	3.5
		OI	-	3.5
		Sfanta Treime	5.2	4.0
2	Number of patients with ischemic heart diseases treated by endovascular interventions	CNSPMU	0	1,000 (including stroke)
		Sfanta Treime	0	500
3	Number of CT test	MCH	0	2,500
		CNSPMU	7,434	10,000
		OI	453	4,500
		Sfanta Treime	0	2,000
4	Number of MRI test	MCH	0	2,000
		CNSPMU	0	2,000
		Sfanta Treime	0	1,000
5	Number of Angiograph test	RCH	400	1,000
		CNSPMU	0	1,200
		Sfanta Treime	0	750
6	Number of Endoscopic intervention	MCH	4,500	6,800
		CNSPMU	2,333	5,800
		OI	8,011	10,000
		Sfanta Treime	1,054	4,000
7	Number of intervention with operation microscope	RCH	0	150
8	Number of bacteriological test	CNSP/CSPs	296,269	330,000
9	Number of serological tests	CNSP/CSPs	273,437	305,000
10	Number of parasitological tests	CNSP/CSPs	332,817	380,000
11	Number of sanitary bacteriological tests	CNSP/CSPs	412,606	470,000
12	Number of sanitary hygienic tests	CNSP/CSPs	368,778	420,000
13	Number of molecular biological tests	CNSP/CSPs	5,791	6,900
14	Number of radiological tests	CNSP/CSPs	3,593	4,100

RCH: Republican Clinical Hospital

MCH: Scientific Research Institute in the Field of Mother and Child Health

CNSPMU: National Scientific-Practical Centre for Emergency Medicine

OI: Oncologic Institute

Sfanta Treime: Chisinau Municipal Clinical Hospital “Sfanta Treime”

CNSP/CSPs: National and Regional Center for Public Health

(2) Qualitative Effect

Expected Qualitative Effects in this project are as follows:

- Improvement of the quality of healthcare services for the citizens in the Republic of Moldova;
- Improvement of health status of citizens in the Republic of Moldova;
- Concretization of sharing roles between hospitals.

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Location Map – the Republic of Moldova

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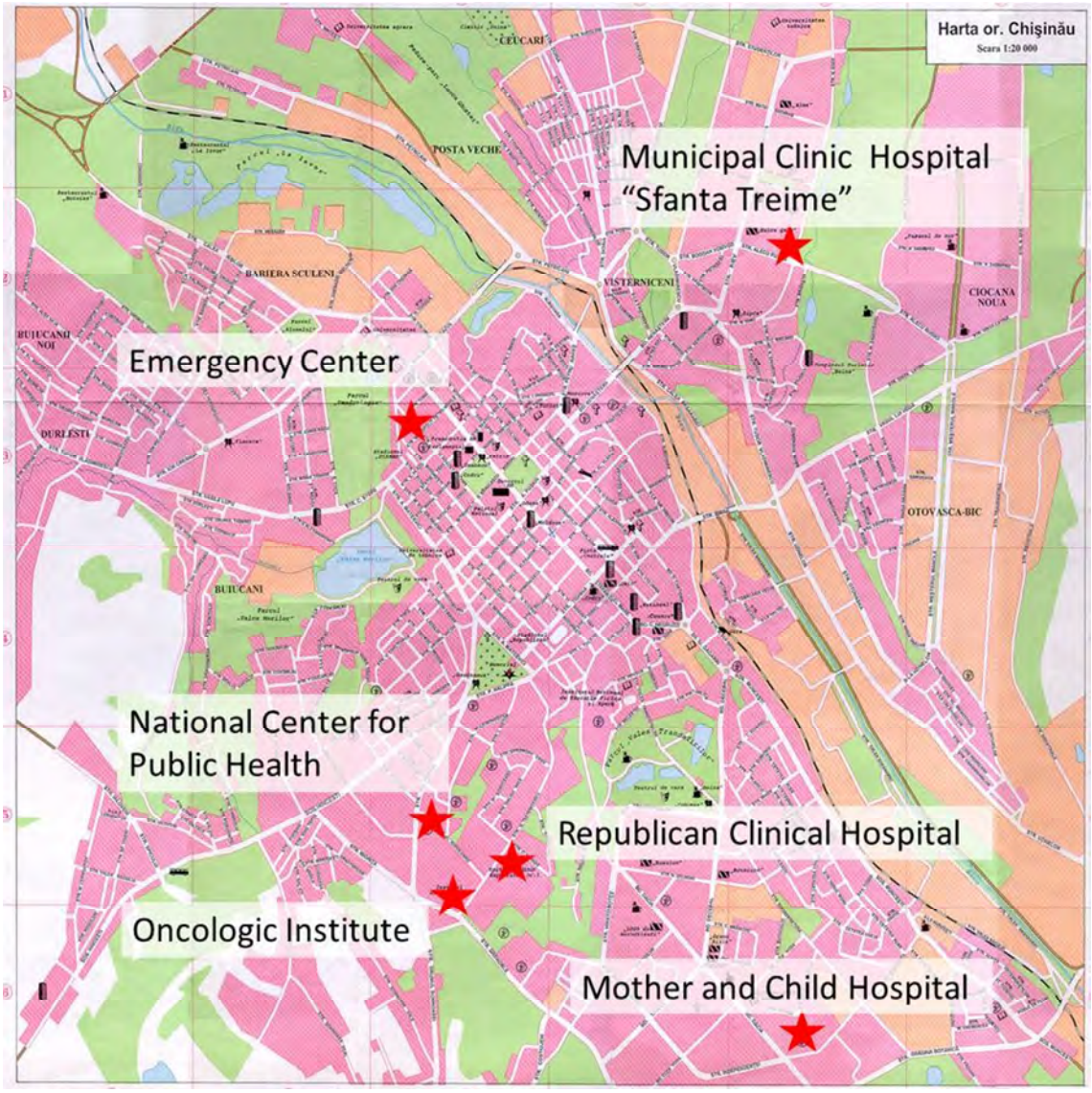
Location Map – Chisinau



★Location of Target Facilities in Chisinau

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Abbreviation

ADA	Austrian Development Agency
AIDS	Acquired Immunodeficiency Syndrome
ANC	Ante Natal Care
ARI	Acute Respiratory Infection
BCG	Bacilli Calmette Guerim
CIS	Commonwealth of Independent States
CT	Computed Tomography
DPT	Diphtheria, Pertussis and Tetanus
EPI	Expanded Programme on Immunization
EU	European Union
FPD	Flat Panel Detector
FP	Family Planning
GAVI	Global Alliance for Vaccines and Immunization
GDP	Gross Domestic Product
GFATM	Global Fund to Fight AIDS ,Tuberculosis and Malaria
GNI	Gross National Income
GTZ	Deutche Gesellschaft fur Technische Zusammenarbeit
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
IEC	Information, Education and Communication
IMR	Infant Mortality Rate
JICA	Japan International Cooperation Agency
MCH	Maternity and Child Health
MDGs	Millennium Development Goals
MMR	Maternity Mortality Rate
MRI	Magnetic Resonance Imaging system
NGO	Non-Governmental Organization
ODA	Official Development Assistance
PAS	Center for Health Policy and Studies
PHC	Primary Health Care
PMT	Project Management Team
PPP	Public Private Partnership

RH	Reproductive Health
SDC	Swiss Agency for Development and Cooperation
SIDA	Swedish International Development Agency
STEP	Special Terms for Economic Partnership
STIs	Sexually Transmitted Infections
TA	Technical Assistance
TAC	Technical Advisory Committee
TIKA	Turkish International Cooperation and Development Agency
TOT	Training of Trainers
UNAIDS	United Nations for AIDS Programme
UCIMP	Unit for Coordination, Implementation and Monitoring of the Project on Health System Restructuring
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNODC	United Nations Office on Drug and Crime
WB	World Bank
WHO	World Health Organization

Chapter 1: Background of the Project

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1-1. Current Situation and Problems of the Sector

1-1-1. Situation and Problems

The Republic of Moldova was known from the Soviet period as an underdeveloped area.

Gross National Income (GNI) per head remains USD1, 980 (2011, WB), one of the lowest in Europe region.

In the Republic of Moldova, economic challenges in the early 90s and deep financial crisis in 1997-98 undermined the activity of the health system. Drastic decreases in public expenditures for health led to interruption or even cessation of part of necessary medical services.

In order to prevent a further deepening of the health system crisis, the Government of Moldova (hereinafter referred to as "GOM") initiated a series of courageous reforms, in particular the development of primary health care. GOM is currently undertaking the overall sector reforms which include improvement of efficiency of the medical system and upgrading the level of medical services.

On the other hand, the infrastructure for medical services is not sufficient because of the lack of financing. In many medical facilities, much of the medical equipment in use is very out of date and may no longer meet the current requirements. Due to this, introduction of latest medical technologies and replacement of obsolete medical devices has become an urgent challenge because some series of surgical interventions can't be conducted although there are medical staffs with advanced medical technology. It is estimated that approximately 25% of all the equipment in the hospitals is of the Soviet Union era origin. At the same time, up to 80% of all the equipment, regardless of its origin, is morally and physically outdated. For the tertiary health care, sector reform is generally on track but high performance medical equipment is in urgent need.

Table 1 Health Indicators of Moldova

Indicators	Republic of Moldova (2010)	CIS (2010)	EU members after 2004/ 2007 (2010)	EU members before 2004 (2010)
Real GDP, PPP$ per capita	2 854	12770	18708	34522
Total health expenditure as % of GDP	11.8	3.7	7.0	10.6
Total health expenditure, PPP$ per capita	341	714	1 324	3 631
Life expectancy at birth – male	64.9	64.4*	71.3	78.2
Life expectancy at birth – female	73.5	74.7*	79.3	83.6
Infant mortality per 1000 births	11.8	11.7*	6.2	3.7*
Maternal mortality per 100 000 live births	44.5	23	8.5	5.5
SDR, all causes, all ages, per 100 000	1288.1	1199.9*	855.1	546.5*
SDR, diseases of circulatory system, 0– 64 years, per 100 000	164.8	198.8*	95.5	31.6*
SDR, selected alcohol-related causes, per 100 000	205.2*	…	93.0*	51.3*
SDR, selected smoking-related causes, per 100 000	748.2	…	339.9	168.5
Tuberculosis incidence per 100 000	115.72	80.55	32.44	7.05
HIV incidence per 100 000	19.7	16.3**	2.2	6
Source: WHO Regional Office for Europe.3 Note: PPP: purchasing power parity; SDR: standardized death rate; *2009 data ** Russian Federation did not report HIV incidence				

Source: MONITORING OFFICIAL DEVELOPMENT ASSISTANCE TO THE HEALTH SECTOR IN THE REPUBLIC OF MOLDOVA 2011 REPORT

Total health expenditure as % of GDP is 11.8%, higher than both EU member countries and the Commonwealth of Independent States (CIS) member countries but the total health expenditure, PPP$ per capita is less than half even compared to CIS member countries. Life expectancy at birth, infant mortality and maternal mortality is almost the same as CIS countries but yet poor compared to EU countries. Mortality rate in relation with infectious disease is improving but tuberculosis incidence and HIV incidence are poorly contorolled compared to CIS countries and EU countries. Awareness campaign for early detection and prevention remains as a challenge. Indicators for non-infectious disease such as SDR on diseases of circulatory system, SDR on selected alcohol-related causes and SDR on selected smoking causes are higher compared to EU countries. Measures for non-infectious disease is getting a key challenge by the decrease of infectious disease and aging of the population.

Demographic statistical indicators of Moldova are presented in Table 2.

Table 2 Demographic statistical indicators of Moldova

Year	Live-Births*1		Deceased*1		Natural increase*1		Infant mortality*1		Maternal mortality*2		0-4 year child mortality*2	
	number	rate1)	number	rate1)	number	rate1)	number	rate1)	number	rate1)	number	rate1)
1970	69,778	19.4	26,577	7.4	43,201	12.0	1,611	23.3	…	…	…	…
1975	79,169	20.6	35,635	9.3	43,534	11.3	3,418	43.4	…	…	…	…
1980	79,580	19.8	40,472	10.1	39,108	9.7	2,789	35.0	51	63.4	…	…
1985	90,453	21.5	46,075	10.9	44,378	10.6	2,788	30.9	45	49.2	…	…
1990	77,085	17.7	42,427	9.7	34,658	8.0	1,482	19.0	41	53.2	…	…
1995	56,411	13.0	52,969	12.2	3,442	0.8	1,214	21.2	23	40.8	1,535	27.3
2000**	36,939	10.2	41,224	11.3	-4,285	-1.1	681	18.3	10	27.1	857	23.2
2005**	37,695	10.5	44,689	12.4	-6,994	-1.9	468	12.4	7	18.6	589	15.6
2006**	37,587	10.5	43,137	12.0	-5,550	-1.5	442	11.8	6	16.0	527	14.0
2007**	37,973	10.6	43,050	12.0	-5,077	-1.4	428	11.3	6	15.8	532	14.0
2008**	39,018	10.9	41,948	11.8	-2,930	-0.9	473	12.2	15	38.4	562	14.4
2009**	40,803	11.4	42,139	11.8	-1,336	-0.4	493	12.1	7	17.2	583	14.3
2010**	40,474	11.4	43,631	12.3	-3,157	-0.9	476	11.7	18	44.5	550	13.6
2011**	39,182	11.0	39,249	11.0	-67	0.0	431	10.9	6	15.3	526	13.4

Source: National Center for Health Management

*1 National Bureau of Statistics of the Republic of Moldova

*2 National Center for Health Management

** exclusive Transnistria

1) per 1,000 persons

2) per 1,000 births

3) per 100,000 births

Attention should be paid that absolute number for live-birth in Moldova is less than 100,000 which is used as a denominator to calculate the maternal mortality rate, thus, even a small number of maternal mortality can affect the rate.

1-1-2. Development Plan

(1) “National Health Policy 2007-2021”

The Government of Moldova approved the “National Health Policy 2007-2021” by the Government Decision No.886 dated August 6th, 2007.

The National Health Policy represents a set of priorities and lines of development in the health sphere established by political will for a term of 15 years, in order to strengthen the population’s health and reduce the inequalities between different social groups and regions in the country.

The goal of the National Health Policy lies in the creation of optimal prerequisites for the maximum realization of the health potential of every individual throughout their entire life and attainment of adequate life quality standards of the population.

The general objectives of the National Health Policy are as follows:

- Increasing life expectancy at birth and lengthening the healthy life;
- Ensuring life quality and diminishing the differences in terms of health for all social groups;
- Strengthening the inter-sector partnership in order to improve the population's health;
- Increasing individual responsibility for one's own health.

The specific objectives of the National Health Policy are as follows:

- Ensuring the economic and social security of the population;
- Promotion of health and disease prevention;
- Ensuring a healthy start in life;
- Maintenance of health of the young generation;
- Strengthening the health of the elderly;
- Combating non-contagious chronic diseases;
- Creating a healthy and safe environment;
- Rational nutrition and increased physical activity;
- Modeling a society free of tobacco, alcohol and drugs;
- Guaranteeing a life free of violence and traumas;
- Ensuring the prerequisites for the improvement of mental health;
- Combating contagious diseases;
- Achieving new performances in the health protection system.

The principles and ways of achieving the objectives are as follows:

- State commitment
- Legislative framework
- Inter-sector actions
- Equality and solidarity
- Sustainable financing and generation of resources
- Deconcentration, decentralization and responsibilities
- Community involvement and interactions

(2) "Healthcare System Development Strategy for the Period 2008-2017"

The Government of Moldova approved the "Healthcare System Development Strategy for the period 2008-2017" by Government Decision No. 1471 dated December 24th, 2007.

The Healthcare System Development Strategy for the period 2008-2017 is a component

part of the country's social and economic policy, oriented towards the healthcare system development, detailing the basic goals and priorities, specified in the Activity Program of the Government for 2005-2009 "Modernization of the country – welfare of the people", in the Economic Growth and Poverty Reduction Strategy (EGPRS), in "The Moldovan Village" National Program, in the Action Plan Republic of Moldova – European Union, National Health Policy and the Code on Science and Innovation of the Republic of Moldova.

The goal of the Strategy, that is a platform for future actions of strengthening the performances of the healthcare system, shall be continuous improvement of the population health, protection of the citizens against financial risks related to accessing the healthcare services, reduction of the inequalities in the use and distribution of the healthcare services and enhancement of the user satisfaction.

The Healthcare System Development Strategy for the period 2008-2017, describes the situation as of 2007 with a SWOT (Strong points, Weak points, Opportunities and Risks/Threats) and concludes as: "Over the last years Moldova has registered significant progress in reforming its healthcare system. The first phase of the reform process was oriented towards stopping the decline in healthcare system conditioned by the financial crisis over the last decade of the previous century. The second phase was marked to a great extent by the introduction of the mandatory health insurance which was accompanied by a significant increase of system funding, improvement of the financial protection of the population and its access to healthcare services. The next phase provides for the mobilization of all resources for structural changes that would result in increased efficiency and quality of the healthcare system."

Pending problems presented in the Healthcare System Development Strategy are;

- Management/Stewardship of the Healthcare System
- Funding of the healthcare system and mechanisms for payment of healthcare services
- Provision/delivery of healthcare services
- Resource Management

The implementation of the Healthcare System Development Strategy was planned to be carried out in two stages:

Stage I (2008 – 2011), comprising the following:

a) Develop and improve the legal and regulatory framework;

b) Accelerate the structural and operational adjustment of basic healthcare services, emergency care, primary healthcare, in-patient care, rehabilitation care and long term healthcare;

c) Increase the system funding from the local sources, use available resources and attract large investments in the healthcare sector;

d) Implement pilot projects for infrastructure development and apply advanced medical technologies.

Stage II (2012 – 2017), will make an emphasis on:

a) Use of all tools that ensure the implementation of the actions necessary for organizing and rendering adequate healthcare services adjusted to population needs and requirements;

b) Increase of healthcare services, accessibility and competitiveness;

c) Completion of the period of formation of a competitive infrastructure, implementation of advanced medical technologies in line with the European Standards that would ensure a higher degree of population satisfaction.

(3) "Boost up the reforms; addressing health needs through investment policies, The Policy Roadmap for Moldova"

Approved by Ministry Order No.192 dated March 01, 2012.

The "Policy Roadmap for Moldova, Boost up the reforms; addressing health needs through investment policies" has been approved with the purpose to boost up the Reform and achieve the objectives of the "National Health Policy 2007-2021" and the "Healthcare System Development Strategy for the Period 2008-2017". The Policy Roadmap contains an Action Plan with timeframe where establishment of common management of; the Scientific Research Institute in the Field of Mother and Child Health Protection and the Republican Clinical Hospital for Children "Em. Cotaga" (2nd quarter, 2012), the Municipal Hospital "V.Ignatenco" , the Municipal Clinical Hospital for Children No.1 and the Municipal Clinical Hospital for Infectious Diseases in Children (4th quarter, 2012), the Republican Clinical Hospital, the Cardiology Institute, the Oncologic Institute, the Neurology and Neurosurgery Institute and the Republican Center for Medical Diagnosis (4th quarter, 2014), are stated.

1-2 Background and Outline of Yen Loan Request

Capital investment for medical facilities and medical equipment slowed down from the '90s, the time of the collapse of the USSR and independence of the Republic of Moldova, until approximately 2007. Existing equipment became superannuated; most of them exceed the service life and are no longer reliable for medical use. The Government of Moldova set the procurement of modern equipment as a priority to achieve a breakthrough in this situation and be able to provide quality health care services to the people of Moldova. Under these circumstances a request for a loan under Special Terms for Economic Partnership (STEP) condition, for procurement of state-of-the-art medical technologies and replacement of obsolete medical devices, to health facilities in Chisinau including the Republican Clinical Hospital, has been submitted from GOM to the Government of Japan in April 2012.

JICA, with the purpose to investigate present situation of health sector in Moldova, sent a Data Collection Survey team from July to August 2012 and conducted data collection of the whole sector, then dispatched a Preparatory Survey team from September 24th, 2012 to November 12th, 2012, and from December 5th, 2012 to December 24th, 2012. The Preparatory Survey team discussed and confirmed the contents of the request with the Ministry of Health and target facilities, conducted site evaluation and evaluation of contents of the equipment, and developed an outline design of the Project.

The Project is aiming to procure equipment for four (4) Republican Hospitals of tertiary level, one (1) Municipal Hospital of secondary level, and one (1) National Center and ten (10) Regional Centers for Public Health. The National and Regional Centers for Public Health are in charge of national security of the health sector in Moldova.

The target facilities of the Project are presented in table 3.

Table 3 Target Facilities of the Project

No.	Name of the Target Facility and address
1	Republican Clinical Hospital or. Chişinău, MD2025, str. N. Testemiţanu, 29
2	Scientific Research Institute in the Field of Mother and Child Health Protection 93, Burebistra, Street, MD 2062, Chisinau
	Republican Clinical Hospital for Children "Em. Coţaga" str. Vasile Alecsandri, 2 MD-2009, or.Chişinău,
3	Oncologic Institute 30, Testemiţanu, Street, MD-2025, Chisinau
4	National Scientific-Practical Centre for Emergency Medicine 1, T.Ciorba, Street MD-2004, Chisinau
5	Chisinau Municipal Clinical Hospital "Sf. Treime" 11, Al. Russo, Street, MD-2068, Chisinau
6	National Center for Public Health 67 A, Gh. Asachi, Street MD-2028, Chisinau
	Regional Centers; 1) Regional Center for Public Health Edineţ or.Edineț, str.A.Pușkin, 16 MD 4600 2) Regional Center for Public Health Bălţi Municipal mun.Bălți, str.I.Franco, 46 MD 3100 3) Regional Center for Public Health Soroca or.Soroca, str.Alexandru cel Bun, 42 MD 3000 4) Regional Center for Public Health Chişinău Municipal mun.Chișinău, str.A.Hîjdeu, 49, MD 2001 5) Regional Center for Public Health Ungheni or.Ungheni, str.A.Cozmescu, 5 MD 3603 6) Regional Center for Public Health Orhei or.Orhei, str.Negruzzi, 78 MD 3502 7) Regional Center for Public Health Hîncești or.Hîncești, str.Toma Ciorbă, 2 MD 3401 8) Regional Center for Public Health Căuşeni or.Căușeni, str.Ana şi Alexandru, 16b MD 4301 9) Regional Center for Public Health Cahul or.Cahul, str.Prospectul Republicii, 20 MD 3900 10) Regional Center for Public Health Comrat or.Comrat, str.Победа, 26

1-3. Trend of Aid by Japan

The Government of Japan positions “Improvement of medical and healthcare service” as a main development agenda in the social sector which is one of the prioritized aid sectors for Moldova. Past aid efforts in the healthcare sector by Japan are “the Project for Improvement of Medical Equipment for Mother and Child Republican Hospital”, “the Project for Improvement of Maternal and Child Health Care System in the Second Level Hospitals” and “the Project for Introduction of Clean Energy by Solar Electricity Generation System” (under implementation).

Outline of the past aids are presented below.

(1) "The Project for Improvement of Medical Equipment for Mother and Child Republican Hospital" accepted in 1998.
E/N amount: 5.5 billion Yen.
Procurement of mother and child medical equipment to the Scientific Research Institute in the Field of Mother and Child Health Protection and the Republican Clinical Hospital for Children "Em. Cotaga" which are the target sites of this Project.

(2) "The Project for Improvement of Maternal and Child Health Care System in the Second Level Hospitals" accepted in 2000.
E/N amount: 7.15 billion Yen.
Procurement of mother and child healthcare equipment to the eleven (11) second level perinatal hospitals in the public perinatal hospital network.

(3) The Project for Introduction of Clean Energy by Solar Electricity Generation System" (under implementation) accepted in 2011.
E/N amount: 4.17 billion Yen.
Procurement of solar electricity generation system to the Oncologic Institute which is a target facility of the Project.

1-4. Trend of Aid by Other Development Partners

(1) Trend of Aid in Health sector

Development Partners (DPs) operating in the Republic of Moldova are; WHO, UNICEF, UNFPA, UNDP, UNHCR, WB, EU, SIDA, SDC, Government of Austria, Government of China, Government of Romania, etc., as shown in Table 4.

Table 4 Development Partners in Moldova

Name of DPs	Name of project/ Programme	Contents/Project sites	Funds (US$/)	Period
ADA	HOPE for the Children of Moldova – establishment of an educational unit for long-term hospitalized children in the Institute of Oncology in Chisinau, Republic of Moldova	National coverage: 100%	€ 450,000	Aug 2010 – Dec 2012
EU	Sector Policy Support Programme Health	National coverage: 100%	€ 43,450,000	Feb 2009 – Feb 2013
EU	Capacity assessment and modernization of the Republican Clinical Hospital in Chisinau	National coverage: 100%	€ 3,000,000	Dec 2008 – Sep 2014
EU	Developing and piloting sheltered housing services for people with mental illness in Moldova	Targeted regional coverage: 100%	€ 294,629	Dec 2008 – Dec 2011
GAVI	New vaccine for PENTA vaccine	National coverage: 100%	US$ 1,101,000	Jan 2009 – Dec 2015
GIZ	CIM Expert – Hospital System Planning	National coverage: 100%	no details supplied	Jul 2010 – Jul 2012
Government of China	Chinese Medicine Centre aided by China	National coverage: 100%	¥ 5,000,000	Mar 2011 – May 2011
Government of China	114 medical ventilators	National coverage: 100%	¥ 6,450,000	May 2011 – Feb 2012
Government of Romania	Refurbishment of Blood Transfusion Center in Cahul	Targeted regional coverage: 100%	€ 140,000	Dec 2010 – Dec 2011
SDC	Modernizing the Moldovan Perinatology System Project 3rd Phase	National coverage: 100%	CHF 3,430,000	Jun 2011 – Mar 2014
SDC	REPEMOL – Regionalization of Pediatric Emergency and Intensive Care Services in Moldova	Targeted regional coverage: 100%	CHF 4,470,000	Sep 2008 – Oct 2013
SDC	Healthy Generation – Scaling up Youth-Friendly Health Services [YFHS] in Moldova	National coverage: 70%; targeted regional coverage: 30%	CHF 1,780,000	Jun 2011 – May 2014
SDC	Development of Community Mental Health Services System in Moldova (CMH Center in Chisinau)	National coverage: 89%; targeted regional coverage: 11%	CHF 730,000	Mar 2009 – Feb 2012
TIKA	Ambulance cars for the Republic of Moldova	National coverage: 100%	US$ 320,000	Aug 2010 – Jan 2011
TIKA	Reconstruction of the Vulcanesti Regional Hospital	Targeted regional coverage: 100%	US$ 695,000	Dec 2010 – Dec 2011
PAS	Empowerment of People with Tuberculosis and Communities in Moldova	National coverage: 80%; targeted regional coverage: 20%	€ 8,576,859	Oct 2010 – Dec 2015

PAS	Reducing HIV-related burden in the Republic of Moldova, 2010–2014	National coverage: 80%; targeted regional coverage: 20%	€ 13,793,025	Jan 2010 – Dec 2014
UCIMP	Strengthening Tuberculosis Control in the Republic of Moldova	National coverage: 100%	€ 5,955,983	Oct 2010 – Dec 2012
UCIMP	Scaling up Access to Prevention, Treatment and Care under the National Program for Prevention and Control of HIV/AIDS/STIs 2006–2010 and Reducing Morbidity, Mortality and HIV-related Impact on People Living with HIV/AIDS, 2010–2014	National coverage: 100%	US$ 9,961,533	Apr 2010 – Dec 2012
UNAIDS	Support to the National AIDS Programme	National coverage: 90%; targeted regional coverage: 10%	US$ 187,047	Jan 2010 – Dec 2011
UNDP	NHDR and Policy Analysis	National coverage: 100%	US$ 40,500	Dec 2011 – May 2012
UNDP	Millennium Development Goals Governance in Action: Catalyzing Human Rights Change in Social Policy	National coverage: 100%	US$ 370,000	Feb 2011 – Dec 2012
UNDP	e-Governance	National coverage: 100%	US$ 220,000	Jan 2011 – Jun 2012
UNFPA	Mechanisms strengthened for supervisory and monitoring systems, including for quality assurance in comprehensive reproductive health service delivery, and for reproductive health commodity security	National coverage: 100%	US$ 148,713	Jan 2011 – Dec 2011
UNFPA	MDA1R303. "Increased availability of counseling and information services on sexual and reproductive health, and HIV/AIDS and STI prevention for young people"	National coverage: 100%	US$ 87,076	Jan 2011 – Dec 2011
UNICEF	Equitable Access to Quality Services	National coverage: 100%	US$ 300,000	Jan 2011 – Dec 2011
UNICEF	Social Policy and Data for Children	National coverage: 100%	US$ 600,000	Jan 2011 – Dec 2011
UNODC	Strengthening National Capacities Towards Reducing HIV Among Injecting Drug Users and Inmates in Eastern Europe and Central Asia	National coverage 100%	US$ 695,000	2010-2013
WB	Preventing Hepatitis B and C in Moldova	National coverage: 70%; targeted regional coverage: 30%	US$ 1,383,760	2009-2012
WB	Health Services and Social Assistance Project	National coverage: 50%; targeted regional coverage: 50%	US$ 34,200,000	2007-2013
WHO	Biennial Collaborative Agreement 2010–2011 between the Ministry of Health of the Republic of Moldova and the WHO Regional Office for Europe	National coverage 100%	US$ 2,325,000	2010-2011

Source: MoH

Among the assistance shown in table 4, assistance by EU, WB and SDC are the ones which have relation with the Project. The Republican Clinical Hospital, which is one of the target facilities of the Project, is constructing a new surgical block with the support of EU and WB under the "Capacity Assessment and Modernization of the Republican Clinical Hospital" in relation with Health Services and Social Assistance Project. The Scientific Research Institute in the Field of Mother and Child Health Protection is one of the target facilities for the Project and SDC's "Modernizing the Moldovan Perinatology System" and REPEMOL as well.

As presented in Table 5,some of the Development Partners are assisting the entire nation and some are focusing to specific Districts (Rayons). Partners assisting the entire nation are relatively many.

Table 5 Covering Area of Development Partners

Area		**Donors**
National		ADA, EU, GAVI, GIZ, Government of China, GFATM (PAS Center, UCIMP) SDC, TIKA, UNAIDS, UNDP, UNFPA, UNICEF, UNODC, WB, WHO
Regional	Chisinau	EU, GFATM (PAS Center), SDC, TIKA, WB
	Balti	EU, GFATM (PAS Center), SDC, TIKA, WB
	Northern region	EU, SDC, WB
	Central region	SDC, WB
	Southern region	Government of Romania, SDC, WB
	ATU Gagauzia	Government of Romania, GFATM (PAS Center), WB
	Transnistrian region	GFATM (PAS Center, UCIMP) TIKA, UNAIDS, UNFPA, WB

Source: MONITORING OFFICIAL DEVELOPMENT ASSISTANCE TO THE HEALTH SECTOR IN THE REPUBLIC OF MOLDOVA 2011 REPORT

Table 6Table 6 shows the distribution of 2011 disbursements across different types of funding categories.

Table 6 Funding Categories and Distribution

	Funding Category	%	Contents of Assistance
1	Investments	58.5%	Construction and refurbishment: 38.7%, Medical supplies: 35.3%, Medical equipment and technology: 13%, Information technology: 2.9%, Other (Patient support and incentives, vehicles, furniture and non-medical equipment: 10.1%
2	Technical Assistance	32.5%	Capacity Building: 56.6%, Policy development: 15.5%, Guideline and protocol development: 12.6%, Legal and regulatory framework: 6.2%, Other (advocacy, communication and social mobilization activities; support for NGOs and community groups; resilience strengthening): 10.1%
3	Administrative costs	9%	Financial assistance to government bodies

Source: MONITORING OFFICIAL DEVELOPMENT ASSISTANCE TO THE HEALTH SECTOR IN THE REPUBLIC OF MOLDOVA 2011 REPORT

Investment for medical equipment and technology is 13% of the total investments while Construction and refurbishment plus medical supplies make up approximately 80%.

The distribution of the disbursements made in 2011 among four health system functions is; Resource generation accounted for half (49.7%); health services delivery for over one third (37.4%); and leadership and governance for one tenth (10.7%). The health financing function received the least assistance (2.3%).

The health services delivery quota is broken down into the four referring components. The two main components are primary health care (47.1%) and hospital care (40.5%). Public health services and emergency care each accounted for only 6.2% of total funds disbursed.

1) Swiss Agency for Development and Cooperation (SDC)

The Swiss Agency for Development and Cooperation started the assistance to the Republic of Moldova in 2000. Current areas of assistance are health sector and water/hygiene sector in accordance with the "Swiss Cooperation Strategy 2010-2013". Development Strategy for 2014-2018 is under drafting taking in consideration the output up to now.

Projects ongoing are;

"Healthy Generation-Scaling up Youth-Friendly Health Services in Moldova"
(1st phase, CHF 180,000)

Project goal is to improve the sexual and reproductive health of young men and women in Moldova (particularly those vulnerable and most at risk) by increasing the demand for, access to, and utilization of quality YFHS and health-related education programme. Proposed project outcomes

"Modernizing Moldovan Perinatology System"
(3rd phase, CHF 3,430,000)

Project goal is the reduction of perinatal and early neonatal mortality and morbidity in Moldova through improved access and availability of high-quality perinatal services at all levels. The expected project outcomes include strengthening of the policy of Ministry of Health in Moldova, the referral system, capacity building for medical staff to provide basic and emergency obstetric and neonatal care.

"Regionalization of the Pediatric Emergency and Intensive Care Service in Moldova"
(2nd phase, CHF 4,470,000)

Project goal is increasing the chances of survival of children that need emergency medical services and the prevention of children's accidents through the creation of a regionalized modern pediatric emergency and intensive care services system.

"Development of Community Mental Health Service System"
(2nd phase, CHF 730,000)

Project goal is to increase the access of people with mental problems to appropriate ambulant mental health care medical services in the community. This shall be achieved by development of an extra- hospital community system which will act in collaboration with the primary health-care system in order to implement prevention measures, psych hygienic and psych correctional services for those with mental disorders.

2) Delegation of the European Union to Moldova (EU)

"Sector Policy Support Programme Health"
Duration: 2009-2013, Amount: EUR 43,450,000

The Project goal is to support the concrete prioritization and implementation of the Moldovan Health Sector Strategy towards improving the health of the population, expanding access, and improving the efficiency and quality of essential public health care services.

"Capacity Assessment and Modernization of the Republican Clinical Hospital"
Duration: 2008-2014, Amount: EUR 300,000,000

Feasibility Study, design and construction of the Republican Clinical Hospital's new surgery block. The new surgical block is under construction and scheduled to complete by September 2013.

EU is planning an assistance to the 10 Regional Public Health Centers through funding of equipment and technical assistance to the users. WHO plans to participate in the technical assistance component. Detailed plans will be made by the end of 2012 and the implementation will be completed during 2013. The National Center for Public Health is not included in this Project.

3) World Bank (WB)

"Prevention of Hepatitis B and C in Moldova"

Duration: 2009-2013, Amount: USD 1,383,760

The project goal is to support the prevention of hepatitis B and C infections in vulnerable and high-risk groups, particularly migrants, youth, men having sex with men, and drug users.

"Health Services and Social Assistance Project"

Duration: 2007-2013, Amount: USD 34,200,000

The project development objectives are to increase access to quality and efficient health services, with the aim of reducing premature mortality and disability for the local population, and to improve targeting of social transfers and services to poor people

(2) Aid Coordination

WHO is the chair of the Development Partner's forum at the moment while UNDP were in that position initially. The Development Partner's forum is held every 3 months although the coordination and cooperation is not yet smooth. Reasons for this are; (1) every Development Partner has its own priority and area of specialty, (2) few opportunities to meet all the Partners, and

(3) Not all the assistance is in line with the Government and/or MoH's disposition.

1-5. Project site and Surrounding Situation

1-5-1. Development Situation of Relevant Infrastructure

(1) Transportation route

Roads in the city of Chisinau and main roads in rural area are paved. In some parts the condition is not ideal, in fact bumpy, but yet is in acceptable condition for transportation.

(2) Delivery route

Items of large size, and/or heavy in weight, which require special attention during delivery and installation, are presented in table 7. MRI requires special attention as it represents an especially heavy load on the floor of the installation location.

Table 7 Items which require attention for delivery

Target Facility	Equipment
Republican Clinical Hospital	Angiography, Digital X-ray
Scientific Research Institute in the Field of Mother and Child Health Protection	MRI, CT, Angiograph, Digital X-ray
National Scientific-Practical Centre for Emergency Medicine	MRI, CT, Angiograph, Digital X-ray
Oncologic Institute	CT
Chisinau Municipal Clinical Hospital "Sfanta Treime"	MRI, CT, Angiograph, Digital X-ray
National Center for Public Health	Bio Safety Cabinet

1-5-2. Natural Condition

The Republic of Moldova is a landlocked nation in Eastern Europe located between Romania to the west and Ukraine to the north, east, and south, with an area of 33,846 km^2. The height above sea level in most of the area is below 200m.

Moldova's climate is moderately continental in the most of the territory, big differences between high and low elevations, and the summer is dry. The southern part is warm even during winter, having a Mediterranean climate. Average annual participation is 568-604 mm and average rainy days are 99-128 days.

Table 8 Average temperature, participation and rainy days of Chisinau

Items	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Average high °C	0.0	1.6	7.0	15.7	21.7	24.9	26.3	26.3	22.0	15.3	7.9	2.6
Average low °C	-6.0	-4.3	-0.6	5.7	11.1	14.4	16.0	15.4	11.2	6.0	1.6	-2.8
Precipitation mm	40	38	35	42	51	76	69	45	46	27	40	38
Rainy days	6.3	6.7	6.3	7.0	7.8	8.4	7.9	5.5	4.8	4.0	6.1	6.6

1-5-3. Environmental and Social Consideration

The Project is not planning to include components such as land acquisition, resettlement and construction of new facilities, which require Environmental and Social Considerations. Medical waste of each facility is disposed of after sterilization by autoclaves. The shielding work for the requested Magnetic Resonance Imaging system which generates electromagnetic waves will be covered by the Project. It is expected to provide adequate Environmental and Social Considerations during delivery and use of the medical devices.

Chapter 2: Contents of the Project

Chapter 2: Contents of the Project

2-1. Overview of the Project

2-1-1. Overall Goal and Project Purpose

(1) Overall Goal

To be improve the quality of health care services for the citizens in the Republic of Moldova

(2) Project Purpose

To strengthen the medical care service efficiently in the Republic of Moldova with the procurement of the medical device and laboratory equipment into the 3rd and 2nd level hospitals located in Chisinau which are expected to act in the future as core hospitals in each area.

2-1-2. Overview of the Project

The Project aims to improve the medical and laboratory services of the four (4) National Hospitals, one (1) Municipal Hospital and the Center for Public Health (inclusive of 10 Regional Centers) through procurement of medical and laboratory equipment.

Target facilities and major equipment are presented in table 9.

Table 9 Target Facilities and Major Equipment

Target Facility	Planned Equipment
Republican Clinical Hospital	Anesthesia machine, Artificial Heart-Lung machine, C-arm, Cryosurgery system, Ultrasound knife, ECG, EEG, Hematology Analyzer, Operation table, Operation Light, Ultrasound Diagnosis Equipment, Patient Monitor, Artificial Ventilator, Maintenance Tools, Furniture, Operation Theater facilities (panel, laminar flow unit, side wall unit, pendant, etc.), etc.
Scientific Research Institute in the Field of Mother and Child Health Protection	CT, MRI, Fluoroscope, X-ray, Ultrasound Diagnosis apparatus, Endoscopes, Artificial Ventilator, EEG, EMG, Ambulance, Genetic Analyzers, PCR, CSSD equipment, Patient Monitor, Audiometer, etc.
National Scientific-Practical Centre for Emergency Medicine	CT, MRI, Angiograph, Fluoroscope, X-ray, Ultrasound Diagnosis apparatus, Endoscopies etc.
Oncologic Institute	CT, Ultrasound Diagnosis apparatus, Mammography, Endoscopes, Patient Monitor, C-arm, etc.
Chisinau Municipal Clinical Hospital “Sfanta Treime”	CT, MRI, Angiograph, Fluoroscope, X-ray, Ultrasound Diagnosis apparatus, Endoscopes, Uro-surgery equipment, ESWL, etc.
National Center for Public Health	ELISA, DNA Sequencer, PCR, Bio-safety cabinet, Culture preparation equipment, Colony Counter, Microscopes, Analytical Balance, Gas Chromatograph, Liquid Chromatography, Atomic Absorption Spectrophotometer, Water Bi-Distiller, Environmental Measurement equipment, Aerosol monitor, Mercury Analyzer, Fluorescent Spectrophotometer, Digital Dispenser, Selective Radiometer, UV monitor, Noise Meter, Vibration meter, PMV meter, Lux meter, Particle counter, Alpha-beta spectrometer, Gamma spectrometer, X-ray impulse dose meter, Survey meter, etc.

2-2. Schematic Plan of the Project

2-2-1. Basic Policy

The Project is planned to be implemented under the Japanese ODA Loan scheme with STEP condition. Most of the target facilities are top referral facilities in Moldova. The existing equipment is obsolete and the number is not meeting the demands, limiting the provision of healthcare services, however the condition of equipment of each facility and equipment management are influenced by insufficient budget to procure and renew equipment due to the economic situation in Moldova. Considering the above-mentioned planning background, the Project has been developed under the policies presented below:

(1) Equipment to be procured under the Project should strengthen medical and healthcare service as top referral facilities.
(2) Equipment to be procured under the Project should be effectively used with current technical level of the medical staff or through short term training.
(3) Equipment to be procured under the Project should be maintainable by the efforts of the Moldovan side.

2-2-2. Review of the Project Contents

(1) Equipment Plan

Procurement Plan of the Project is based on the request of each facility and includes replacement of existing equipment and introduction of new technologies. Analysis and result is presented in table 10. Equipment for hospitals will be used to provide medical services, equipment for public health centers will be used for laboratory tests, the former will be a source of medical service fee income and the latter will become a source for test income. Diagnosis and treatment services using the equipment are paid by the health insurance, not burdening the patients with out of pocket payment, therefore, introduction of the equipment will be, not only an increase of income of the target facilities but also a big benefit for the people and patients of Moldova .

Table 10 Analysis and Result of Planned Equipment

Target Facility	Analysis of Planned Equipment	Result
Republican Clinical Hospital	Complete set of equipment for the surgical block under construction.	Installation in the new facility. Mainly, replacement of equipment which exists in OR and ICU, plus some high technologies.
Scientific Research Institute in the Field of Mother and Child Health Protection	Imaging diagnostic equipment, Laboratory equipment, Endoscopes, ICU equipment, Genetic diagnosis equipment, operation equipment, ORL diagnosis and treatment equipment, Audiology equipment.	Replacement of obsolete existing equipment, plus introduction of new technologies such as CT, MRI and Angiography.
National Scientific-Practical Centre for Emergency Medicine	Imaging diagnosis equipment, Endoscopes	Replacement of obsolete existing equipment, plus introduction of new technologies such as CT, MRI and Angiography.
Oncologic Institute	Imaging diagnosis equipment, Endoscopes, operation theater equipment, ICU equipment	Replacement of obsolete existing equipment, plus introduction of new technologies such as CT.
Chisinau Municipal Clinical Hospital "Sfanta Treime"	Imaging diagnosis equipment, Endoscopes, Uro-surgery equipment	Replacement of obsolete existing equipment, plus introduction of new technologies such as CT, MRI and Angiography.
National Center for Public Health	Bacteriology investigation equipment, Food investigation equipment, Soil and air investigation equipment, Electromagnetic investigation equipment, Noise and vibration monitoring equipment, Radiology contamination investigation equipment	Replacement of obsolete existing equipment, plus introduction of new technologies such as Electromagnetic investigation equipment and Radiology contamination investigation equipment.

In exception of equipment recently procured and/or scheduled to procure, the existing equipment in the target facilities is older than 10 years and superannuated. Therefore, it is judged necessary to update all existing equipment.

The requested equipment contains renewal and newly introduced equipment. For the equipment to renew, it is judged as necessary and valid since the Moldovan side prioritized and selected the equipment which requires urgent procurement.

The request to the Project contains much new equipment for the target facilities. Those equipment were first confirmed its necessity, analyzed its justification from the point of view of human resources, operation capability, budget for operation and maintenance, procurement of consumables, and only the equipment which were judged as valid were included in the plan. Some of the equipment among the equipment which had difficulties on judging its justification was

canceled by the Moldovan side taking into consideration the comments from the consultants.

The request includes MRI and Angiography which are large in size and expensive in price. Both of them are in use in some public and/or private facilities. At present, public medical institution having a MRI is yet only one, not enough to cover all demands.

From the above, it has been judged as valid the operation capacity of newly introduced equipment and demand of health service by the equipment. However, this is a new introduction of large and expensive equipment for the target facilities. In addition, an state-of-the-art CT is planned. Thus, the equipment plan has been developed on the assumption that training on operation and clinical use will be provided to ensure the justification.

However, considering the required and current spent cost for operation and maintenance, it might be necessary to reconsider the specifications of the equipment and / or the procurement of the equipment itself. Further study based on operation and maintenance cost will be carried out during the Detailed Design stage.

Table 11 Equipment which might reconsider procurement and specification

Target Facility	Equipment
Republican Clinical Hospital	Ultrasonic diagnostic apparatus (specification), etc.
Scientific Research Institute in the Field of Mother and Child Health Protection	Amino acid analyzer, Real time PCR, etc.
Chisinau Municipal Clinical Hospital "Sfanta Treime"	Ultrasonic diagnostic apparatus (specification), etc.
National Center for Public Health	DNA sequencer, Real time PCR, Chromatography, etc.

Equipment Plan and Short Specification for major items are presented in appendix 5 and appendix 6.

(2) Soft Component Service; Technical Assistance (TA) Services

The medical devices which will be introduced in this project are necessary and appropriate choices for improvement of medical care services in Moldova. With the introduction of these medical devices, doctors should strive to improve their skills in order to fully utilize these technologies for optimal treatment and diagnosis. The National Scientific-Practical Centre for Emergency Medicine, by its own expenses, plans to send abroad some doctors for training. On the other hand, the Chisinau Municipal Clinical Hospital "Sfanta Treime" plans to employ doctor(s)

who has knowledge of imagistic devices and can utilize for diagnosis and treatment. The Republican Clinical Hospital and the Scientific Research Institute in the Field of Mother and Child Health Protection do not have plans of employing additional doctors and/or training at the moment and rely on the training which is planned in the Project. The Oncologic Institute and the National Center for Public Health do not have plan of special training because the medical/laboratory devices planned in the Project are replacement of existing ones.

From the inquiring survey, there are some hospitals which are already planning to organize training courses by themselves for the purpose of improving specialist doctors' skills, along with plans to employ new staff who are already experienced with new medical devices. The Ministry of Health holds the opinion that the hospitals should consider the self-training for doctors from their own budget. On the other hand, there are some hospitals which are requesting common medical devices used for CT, MRI and Angiography. So the Ministry of Health also agrees that the application training (not only operational training but also technical guidance for diagnosis and treatment) regarding CT, MRI and Angiography is effective for doctors who will operate and utilize those medical devices in each hospital for treatment and diagnosis. It is a very beneficial method in terms of cost performance. And doctors who do this training together will surely form good relationships and so be able to share their experiences, post-training.

The soft component service is to facilitate the implementation of the project by assisting the Executing Agency (Ministry of Health of the Republic of Moldova) to improve the medical staff's capacity. The services consist of two items:

1) Invite a trainer from abroad and arrange application training for medical doctors in Chisinau on CT, MRI and Angiography (cf. table 12).

Table 12 Training for CT, MRI, Angiography

Medical Device	Duration	Training Cost	Country of Trainer
CT	1 Week	2,500EURO	Romania, Ukraine, Russia, etc.
MRI	1 Week	2,500EURO	
Angiography	3 Weeks	3,500EURO	

There are few doctors who can utilize the Navigation System and Pediatric Laparoscopy in Moldova and it is difficult for the hospitals to arrange the training by themselves. The Republican Clinical Hospital, Scientific Research Institute in the Field of Mother and Child Health Protection request the application training for 2 medical devices in the loan project.

2) Arrange an application training on more complicated medical equipment for medical doctors abroad as Training of Trainers (TOT) and Practical Training for other doctors (if necessary). (cf. table 13) Trainee's experience and knowledge about the navigation system and pediatric laparoscopy who participate in training abroad should be shared in each hospital after TOT.

Table 13 Training for Navigation System and Pediatric Laparoscopy

Medical Device	Duration	Training Place	Training Cost	Country of Trainer
Operational Microscope for brain surgery (The Republican Clinical Hospital)	1 Week	Abroad	3,000 EURO per person	Romania, Ukraine, Russia, etc.
		Moldova	5,000 EURO	
Pediatric Laparoscopy (Scientific Research Institute in the Field of Mother and Child Health Protection)	1 Week	Abroad	3,000 EURO per person	
		Moldova	6,000 EURO	

(3) Technical Assistance related to Japanese ODA Loans (Draft)

Technical Cooperation for Medical Equipment Management System (Draft)

The target facilities expressed interests on receiving technical support on management for proper usage and maintenance of the new equipment to procure, aiming for long-term lasting and effective usage.

In two of the SDC programs, "Modernizing Moldovan Perinatology System" and "Regionalization of the Pediatric Emergency and Intensive Care Service in Moldova（REPEMOL）", an web-based information system for data collection and data management of inventory of medical devices called OPENMEDIS was introduced along with the Health Technology Management System[1] to some hospitals in Moldova. SDC's support in field level is nearly ending while the Ministry of Health plans to expand the OPENMEDIS to all the public hospitals. SDC has a plan to continue the support on medical equipment management to Scientific Research Institute in the

[1] Management system for medical devices such as preventive and collective maintenance, planning and budgeting of spare parts, consumable and procurement, etc.

Field of Mother and Child Health Protection but there's no plan to expand the activities to the other target facilities of the Project.

In this regard, one possible technical cooperation by JICA will consider the utilization of OPENMEDIS at the field level, capacity building for BME and medical equipment technicians to improve their skills for effective usage of medical devices which will be introduced in the loan project.

Ministry of Health, Chisinau Municipal Department of Health and Agency of Medication and Medical Devices are positive and receptive regarding this idea of technical support. It should be considered in terms of collaboration with other donors.

【Activities】

・Medical Equipment Management Activities
・Establishment of medical equipment maintenance system using Health Technology Management System for 6 +α hospitals
・Data Inventory and analyzing for planning of next year using OPENMEDIS
・Providing Technical Training for technicians and BME（in Moldova and Japan）
・Support of user training by biomedical engineer or technician
・Strengthening partnership with Technical University of Moldova
・Providing Training of Trainer for dissemination of these activities　　Etc.

【Example of Input】

・Experts: 3 to 5 (Leader/Health Planning/Health Information, 2-Medical Equipment, Training Planner, Project Coordinator)
・Budget for workshops/trainings
・Test devices for medical equipment, maintenance tools
・Personal computers, printer, copy machine
・Vehicle (for Experts, monitoring, etc.)

2-2-3. Implementation and Procurement Plan

It is planned to conduct the selection of consultant for the implementation of the Project simultaneously in line with the Detail Design. Cost for the Detailed Design of the Project is planned to be covered by JICA once the Project is realized. Estimated timeframe until the completion of the Project (procurement, installation and completion of commissioning of the equipment) is approximately 27 months. 39 months is estimated when including the warranty period of 12 months.

Procurement of consulting service for the implementation of the Project and procurement of goods for JICA's Loan project should be carried out according to JICA's guidelines ("Guidelines for the Employment of Consultants under Japanese ODA Loans" and "Guidelines for Procurement under Japanese ODA Loans").

Single-Stage Two-Envelope Bidding with qualification examination which implements the Pre-qualification process during the bidding timing is planned to shorten the bidding schedule. The number of procurement package was planned as one during the Preparatory Survey but this should be reviewed during the Detailed Design.

Project Implementation Plan is presented in Appendix 8.

PMT within the Ministry of Health will be the responsible organization for the procurement and implementation of the Project. The PMT will consist of staffs of the Ministry of Health without members from the target facilities. Members of the target facilities are expected to participate in renovation of the facility, technical comments on the tender, and inspection and commissioning after the procurement as TAC, under the instruction of the PMT.

Delivery (bringing in) and installation of big and/or heavy devices require coordination between the Japanese side and Moldovan side on renovation efforts and delivery plan which should be reflected in the work plan and procurement plan.

Items which require attention are presented below:

① Angiograph
② X-ray
③ MRI
④ CT
⑤ Infrastructure for operation rooms of RCH

Requested equipment and facility which require coordination is presented in Table 14.

Table 14 Requested Equipment and Facility which require coordination is presented

	Angiography	CT	MRI	X-ray	Infrastructure for operation rooms
Republican Clinical Hospital	○				○
Scientific Research Institute in the Field of Mother and Child Health Protection	○	○	○	○	
National Scientific-Practical Centre for Emergency Medicine	○	○	○	○	
Oncologic Institute		○			
Chisinau Municipal Clinical Hospital "Sfanta Treime"	○	○	○	○	

Radiographic equipment requires preparation of installation room. Each facility is responsible for the preparation work. It is necessary to monitor the preparation work by each facility including budget allocation.

New operation facility, which will be home to all medical equipment installed via this project, in under construction now. It is estimated that completion of construction is August 2013. 5 operating rooms and one ICU area of this new operation facility will be utilized from August 2013 through assistance of Austria. Other operating rooms and areas will be furnished by this project. It is necessary to coordinate with construction company for preparation and installation of medical and infrastructure equipment.

The National Scientific-Practical Centre for Emergency Medicine got budget to resume the construction of the additional wing building which the construction has been suspended in early '90s. Bidding for the construction work has been effected although the construction work hasn't yet started. Furthermore, the Chisinau Municipal Clinical Hospital "Sfanta Treime" is refurbishing its ICU department. Other required related refurbishment and construction works in relation with the Project will be carried out by the target facilities. It is planned to implement these works during the period from Detailed Design to delivery of equipment under the coordination between the target facilities and consultants.

Various advanced medical equipment is required and it is necessary to coordinate appropriate procurement schedule.

2-3. Operation and Maintenance Plan of the Project

Operation and maintenance of medical devices will be implemented by each target facility after introduction of medical devices. The equipment plan was made based on the request by specialists / users. It is confirmed that there are enough human resources to operate the planned medical equipment. The operational training, application training and refresher training for users will be conducted not only in this project's soft component but also by themselves as self-training in each hospital. And additional training might be planned in the Technical Cooperation Support under JICA, if necessary.

The medical equipment maintenance system in each hospital is presented in the Table 15. The medical equipment technicians or BME are allocated for medical equipment maintenance in each hospital. The maintenance system is left to each hospital.

Table 15 Medical Equipment Maintenance System in each hospital

Target Facility	Technician / BME	Maintenance System
Republican Clinical Hospital	8 (will be reduced to 2 in 2013)	In plan to extend outsourcing
Scientific Research Institute in the Field of Mother and Child Health Protection	8 (including 4 BME), supported by SDC, Implementing OPENMEDIS	By in-house technical staff as much as possible and outsource only items which are not possible to cover by in-house technical staff.
Republican Clinical Hospital for Children "Em. Coţaga"	1(BME) Employed in Oct 2012	Mostly outsourcing
National Scientific-Practical Centre for Emergency Medicine	5 (including BME 1), Implementing OPENMEDIS	By in-house technical staff as much as possible and outsource only items which are not possible to cover by in-house technical staff.
Oncologic Institute	3	By in-house technical staff as much as possible and outsource only items which are not possible to cover by in-house technical staff.
Chisinau Municipal Clinical Hospital "Sfanta Treime"	1	100% outsourcing
National Center for Public Health	Several technicians in each department	Mostly outsourcing

Source: interview

Republican Clinical Hospital is going to change the maintenance system from in-house maintenance system to outsourcing system leaving 2 medical equipment technicians or BME. The technician or BME is allocated in each hospital even where using outsourcing system completely. Sophisticated and advanced medical equipment should be maintained periodically by the manufacture's agent but not by in-house technical staff. It is necessary to consider both maintenance systems for the future.

The medical equipment technician and BME at Scientific Research Institute in the Field of Mother and Child Health Protection, National Scientific-Practical Centre for Emergency Medicine, are receiving technical support through the sub component of SDC programs "Modernizing Moldovan Perinatology System" and "Regionalization of the Pediatric Emergency and Intensive Care Service in Moldova (REPEMOL)". Medical equipment technicians and BMEs provide basic In-house Maintenance Service as much as possible in their hospitals.

So far, a Policy for maintenance system for medical technologies does not exist clearly in Moldova. The Ministry of Health is currently planning to develop a Policy and Strategy in the near future. The maintenance of medical equipment which will be procured in the Project, for the moment, remain the same as in the current maintenance program.

2-4. Estimated Project Cost

2-4-1. Estimated Cost

Estimated cost of the Project is presented in Table 16.

Table 16 Cost of the Project

(Unit: Million JPY)

Item	Foreign Currency Portion		Local Currency Portion		Total	
	Total	Loan	Total	Loan	Total	Loan
1. Equipment Procurement (installation, tranport, inclusive)	5,348	5,348	0	0	5,348	5,348
2. Related Works	0	0	332	0	332	0
3. Price Escalation	227	227	0	0	227	227
4. Physical Contingency	280	223	0	0	280	223
5. Consulting Services	110	110	19	19	128	128
6. Interest during construction	12	0	0	0	12	0
7. Commitment Charge	11	0	0	0	11	0
8. Land Acquisition	0	0	0	0	0	0
9. Administration Cost	0	0	313	0	313	0
10. Tax (VAT and Import Tax)	0	0	0	0	0	0
	5,988	5,907	663	19	6,651	5,926

Currency Rate: 1US$=79.0JPY, 1US$=12.4 Moldovan Lei, 1 Moldovan Lei=6.4JPY

Price Escalation Rate: Foreign Currency Portion 2.1%, Local Currency Portion 6.2%, Physical Contingency Rate: 5.0%; (Date of Cost Estimation: December 2012)

* Total figure might not equal to the sum due to rounding.

2-4-2. Cost for Operation and Maintenance

Operation and Maintenance cost of the newly introduced equipment is estimated to be 7% (based on WHO's guideline) of the cost of procurement.

Estimated Operation and Maintenance cost required is far bigger compared to current cost. If there is no significant increase from existing Operation and Maintenance cost, only part of the equipment will be able to operate after the procurement. Detailed examination of Operation and Maintenance cost per device and request to Moldovan side on increase of budget should be carried out in parallel to ensure proper implementation of the Project. The Ministry of Health is in plan of issuing a Ministry Order obliging to the target facilities of the Project to ensure operation and maintenance of the equipment. The target facilities need to examine a new system to secure the above-mentioned budget and also request increase of budget to CNAM.

2-5. Consideration for Implementation of the Project

2-5-1.Technology and Effectiveness of Japanese Company

Medical devices using Japanese Technology which have high advantages are CT, endoscope,

Ultrasound machine, EEG and EMG. The ones using Japanese Technology which have certain advantages are MRI, Angiograph, Patient Monitor, Defibrillator, Gas Chromatograph, Liquid Chromatograph, Atomic absorption spectrophotometer and microscope.

Japanese technology provide advantages in just a few items for the rest of devices, competing products from third countries may have better performance and/or have better cost performance. Procurement plan of the Project will be developed in a way that will give full play to the advantages of the devices mentioned above.

2-5-2. Main Materials and Equipment that can be procured from Japan and their costs

Among the planned equipment which might be procured from Japan is presented in Table 17. Although the percentage may change through detailed examination of the procurement plan from now on, it is confirmed that the percentage of the equipment which can be procured from Japan is high.

Table 17 Prospective Equipment from Japan

Target Facility	Equipment	Ratio of Available Procurement from Japan
Republican Clinical Hospital	Angiography, C-arm, Coagulometer, Hematology Analyzer, Defibrillator, Patient Monitor, Refrigerator etc.	49.0%
Scientific Research Institute in the Field of Mother and Child Health Protection	CT, MRI, Fluoroscope, X-ray, Ultrasound apparatus, Endoscopes, EEG, EMG, Patient Monitor, etc.	81.1%
National Scientific-Practical Centre for Emergency Medicine	CT, MRI, Angiography, Fluoroscope, X-ray, Ultrasound apparatus, Endoscopes, etc.	86.0%
Oncologic Institute	CT, Ultrasound, Mammograph, Endoscopes, Patient Monitor, C-arm, etc.	77.2%
Chisinau Municipal Clinical Hospital “Sfanta Treime”	CT, MRI, Angiography, Fluoroscope, X-ray, Ultrasound, Endoscopes, Uro-surgery equipment, etc.	68.0%
National Center for Public Health	Bio Safety Cabinet, Culture preparation, Colony Counter, Microscopes, Analytical Balance, Gas Chromatograph, Liquid Chromatograph, Atomic absorption spectrophotometer, Ultra water purifier, Fluorescent Spectrophotometer, Titration machine, etc.	63.6%
Total		70.0%

2-5-3. Possibility of Participation of Japanese Companies

The Project is planned to be implemented under STEP condition which limits the prime contractor to Japanese National Firms and regulates that not less than 30% of contract amount should be of Japanese origin.

Chapter 3: Evaluation of the Project

Chapter 3: Evaluation of the Project

3-1. Preconditions and External Condition for Achievement of the Project Overall Plan

3-1-1. Preconditions

(1) Requested equipment for the Republican Clinical Hospital is planned for the new surgical building under construction and some of them require coordination with the construction work. The Ministry of Health secures necessary coordination with the construction company.

(2) For equipment which requires installation, the Target Facilities out of the Republican Clinical Hospital and/or the Ministry of Health should implement necessary pre-installation work.

(3) The Target Facility and/or the Ministry of Health take necessary measures for the equipment which requires user training for its use, further to the operation instructions as part of the commissioning in case it is not included in the Plan of the Project.

(4) The Target Facilities and/or the Ministry of Health will take measures such as securing the access route for large and/or heavy equipment when delivered or upon delivery.

3-1-2. External Condition

Structure and/or Policy of the Ministry of Health will not change suddenly.

3-2. Evaluation of the Project

3-2-1. Relevance

Coverage population of the four (4) National Medical Facilities and the National Center for Public Health is approx., 3.5 million, the entire population of the Republic of Moldova. The Coverage population of the Chisinau Municipal Clinical Hospital “Sfanta Treime” is approx., 0.8 million, the entire Municipal of Chisinau, plus alpha for the services the same hospital offers at Republican level and to the surrounding of the Municipal of Chisinau. The Project aims to improve the quality of healthcare services through a large scale investment for procurement of equipment to replace superannuated equipment and introducing new technologies to the top referral hospital of the Republic, the core hospital of the Municipal of Chisinau, and to the National Center for Public Health which is in charge of national security of the health sector, and is in line with both the “National Health Policy” and “Healthcare System Development Strategy for 2008 – 2017” of the Republic of Moldova, aiming to access high quality healthcare services, and the policy of the Government of Japan which positions “Improvement of medical and healthcare service” as a main development agenda in the social sector which is one of the prioritized aid sectors for Moldova, therefore, it is judged as valid to implement the Project.

3-2-2. Effectiveness

(1) Quantitative Effect

Operation and Effect Indicator (draft) are presented in Table 18 as Quantitative Effect.

Table 18 Operation and Effect Indicator (Draft)

No.	Indicators	Target Facilities	Baseline (Year: 2011)	Target for each facilities (2017) [2 years after completion]
1	Average Number of days of hospitalization for Patients with Endoscope intervention	MCH	5.4	4.0
		CNSPMU	4	3.5
		OI	-	3.5
		Sfanta Treime	5.2	4.0
2	Number of patients with ischemic heart diseases treated by endovascular interventions	CNSPMU	0	1,000 (including stroke)
		Sfanta Treime	0	500
3	Number of CT test	MCH	0	2,500
		CNSPMU	7,434	10,000
		OI	453	4,500
		Sfanta Treime	0	2,000
4	Number of MRI test	MCH	0	2,000
		CNSPMU	0	2,000
		Sfanta Treime	0	1,000
5	Number of Angiograph test	RCH	400	1,000
		CNSPMU	0	1,200
		Sfanta Treime	0	750
6	Number of Endoscopic intervention	MCH	4,500	6,800
		CNSPMU	2,333	5,800
		OI	8,011	10,000
		Sfanta Treime	1,054	4,000
7	Number of intervention with operation microscope	RCH	0	150
8	Number of bacteriological test	CNSP/CSPs	296,269	330,000
9	Number of serological tests	CNSP/CSPs	273,437	305,000
10	Number of parasitological tests	CNSP/CSPs	332,817	380,000
11	Number of sanitary bacteriological tests	CNSP/CSPs	412,606	470,000
12	Number of sanitary hygienic tests	CNSP/CSPs	368,778	420,000
13	Number of molecular biological tests	CNSP/CSPs	5,791	6,900
14	Number of radiological tests	CNSP/CSPs	3,593	4,100

(2) Qualitative Effect

Qualitative Effects in this project are as follows:

- Improvement of the quality of health care services for the citizens in the Republic of Moldova;
- Improvement of health status of citizens in the Republic of Moldova;
- Concretization of sharing roles between hospitals.

(3) Internal Rate of Return (IRR)

Internal Rate of Return (IRR) won't apply to the Project due to difficulty in converting the benefit of the Project into currency or to quantize.

Appendices

MEMBER LIST OF THE PREPARATORY SURVEY

(1) 1st Field Survey

Name	Title in this project	Position/ Organization
Official Member		
Mr. Ikuo TAKIZAWA	Leader	Director, Health Division1, Health Group1, Human Development, JICA
Ms. Yoko KOTOURA	Sectorial Officer	Health Division1, Health Group1, Human Development, JICA
Ms. Masako YOSHIHARA	Country Officer	Europe Division, Middle East and Europe Department, JICA
Dr. Mitsuo ISONO	Senior Advisor (Health Sector)	JICA
Consultant Member		
Mr. Tamotsu NOZAKI	Consultant Leader / Medical & Health Planner – 1	Fujita Planning Co., Ltd.
Mr. Yosuke UMEMIYA	Sub Consultant Leader / Medical & Health Planner – 2	Fujita Planning Co., Ltd.
Mr. Akio KANEKO	Medical Equipment Planner – 1	LLC AMHN
Mr. Koichi NAKAMURA	Infrastructure / Utilities Planner	Yokogawa Architects & Engineers, Inc.
Ms. Kyoko GOTO	Medical Equipment Planner – 2	Fujita Planning Co., Ltd.
Mr. Hiroshi YOSHINO	Medical Equipment Planner– 3	Fujita Planning Co., Ltd.
Ms. Kana TATSUNO	Health Human Resource Development / Training Planner	Fujita Planning Co., Ltd.

MEMBER LIST OF THE PREPARATORY SURVEY

(2) 2nd Field Survey

Name	Title in this project	Position/ Organization
Official Member		
Mr. Daimin HANADATE	Leader	Director, Europe Division Middle East and Europe Department, JICA
Ms. Yoko KOTOURA	Sectorial Officer	Health Division1, Health Group1, Human Development, JICA
Ms. Masako YOSHIHARA	Country Officer	Europe Division, Middle East and Europe Department, JICA
Consultant Member		
Mr. Yosuke UMEMIYA	Sub Consultant Leader / Medical & Health Planner – 2	Fujita Planning Co., Ltd.
Mr. Akio KANEKO	Medical Equipment Planner – 1	LLC AMHN

1st Field Survey

			Official Member				Consultant Member						
			Leader	Sectoral Officer	Country Officer	Specialist	Consultant Leader / Medical & Health Planner – 1	Sub Consultant Leader / Medical & Health Planner – 2	Medical Equipment Planner – 1 Planner	Medical Equipment Planner – 2 Planner	Medical Equipment Planner – 3 Planner	Infrastructure / Utilities Planner	Health Human Resource Development / Training Planner
	Date /Month		Mr. Ikuo Takizawa	Ms. Yoko Kotoura	Ms. Masako Yoshihara	Dr. Mitsuo Isono	Mr. Tamotsu Nozaki	Mr. Yosuke Umemiya	Mr. Akio Kaneko	Ms. Kyoko Goto	Mr. Hiroshi Yoshino	Mr. Koichi Nakamura	Ms. Kana Tatsuno
1	2012/9/24	Mon	NRT/VIE				NRT/VIE						
2	2012/9/25	Tue	VIE/KIV				VIE/KIV			NRT/VIE			
3	2012/9/26	Wed	MoH, RCH, EU, CNSPMU				Same as Official Member			VIE/KIV			
4	2012/9/27	Thu	ICSDOSM, OI				Same as Official Member			CNSPMU			
5	2012/9/28	Fri	WHO、KIV/VIE	WHO、SDC、WB			Same as Official Member			CNSPMU			
6	2012/9/29	Sat	VIE/	In-house Meeting, Data Arrangement			In-house Meeting, Data Arrangement			In-house Meeting, Data Arrangement			
7	2012/9/30	Sun	NRT	In-house Meeting, Data Arrangement			In-house Meeting, Data Arrangement			In-house Meeting, Data Arrangement			
8	2012/10/1	Mon		Meeting	Additional Survey		CNSP			ICSDOSM	Sfanta Treime Hp		
9	2012/10/2	Tue		Meeting	KIV/		National Diagnosis Center			ICSDOSM	Sfanta Treime Hp		
10	2012/10/3	Wed		CNAM、KIV/VIE			CNAM、KIV/VIE	CNAM		ICSDOSM	Sfanta Treime Hp		
11	2012/10/4	Thu		VIE/			VIE/	Add. Survey, Data Arrangement		OI	KIV/VIE		
12	2012/10/5	Fri		NRT			NRT	Add. Survey, Data Arrangement		OI	VIE/		
13	2012/10/6	Sat						Add. Survey, Data Arrangement		KIV/VIE	NRT		
14	2012/10/7	Sun						Add. Survey, Data Arrangement		VIE/			
15	2012/10/8	Mon						Add. Survey, Data Arrangement		NRT			
16	2012/10/9	Tue						Add. Survey, Data Arrangement					
17	2012/10/10	Wed						Em. Cotaga Hp					
18	2012/10/11	Thu						Em. Cotaga Hp	NRT/VIE				
19	2012/10/12	Fri						Add. Survey, Data Arrangement	VIE/KIV				
20	2012/10/13	Sat						Em. Cotaga Hp, Data Arrangement				NRT/VIE	
21	2012/10/14	Sun						In-house Meeting, Data Arrangement				VIE/KIV	
22	2012/10/15	Mon						RCH, MoH				Same as Mr. Kaneko	
23	2012/10/16	Tue						Add. Survey, Data Arrangement	OI			Same as Mr. Kaneko	
24	2012/10/17	Wed						Add. Survey, Data Arrangement	ICSDOSM			Same as Mr. Kaneko	
25	2012/10/18	Thu						Add. Survey, Data Arrangement	CNSPMU			Same as Mr. Kaneko	
26	2012/10/19	Fri						Add. Survey, Data Arrangement	Sfanta Treime Hp			Same as Mr. Kaneko	
27	2012/10/20	Sat						In-house Meeting, Data Arrangement				Meeting, Data Arrangement	
28	2012/10/21	Sun						In-house Meeting, Data Arrangement				Meeting, Data Arrangement	
29	2012/10/22	Mon						Add. Survey, Data Arrangement	Add. Survey, Data Arrangement			Add. Survey, Data Arrangement	
30	2012/10/23	Tue						Add. Survey, Data Arrangement	Add. Survey, Data Arrangement			Add. Survey, Data Arrangement	NRT/VIE
31	2012/10/24	Wed			NRT/VIE			Add. Survey, Data Arrangement	Add. Survey, Data Arrangement			Add. Survey, Data Arrangement	VIE/KIV
32	2012/10/25	Thu			VIE/KIV、MoH			Workshop for Medical Equipment Management				Add. Survey, Data Arrangement	Same as Mr. Umemiya
33	2012/10/26	Fri			OI	/KIV、OI		Workshop, OI				Add. Survey, Data Arrangement	OI etc.
34	2012/10/27	Sat			In-house Meeting, Data Arrangement			In-house Meeting, Data Arrangement				In-house Meeting, Data Arrangement	
35	2012/10/28	Sun			In-house Meeting, Data Arrangement			In-house Meeting, Data Arrangement				In-house Meeting, Data Arrangement	
36	2012/10/29	Mon			ICSDOSM, RCH, Sfanta Treime Hp			Same as Official Member	Add. Survey, Data Arrangement			Add. Survey, Data Arrangement	RCH etc.
37	2012/10/30	Tue			MoH, CNSP	MoH、KIV/IST/		Same as Official Member	Add. Survey			Add. Survey, Data Arrangement	Same as Official Member
38	2012/10/31	Wed			KIV/VIE	NRT		Add. Survey, Data Arrangement				Add. Survey, Data Arrangement	REPEMOL etc.
39	2012/11/1	Thu			VIE/			Add. Survey, Data Arrangement				Add. Survey, Data Arrangement	ICSDOSM
40	2012/11/2	Fri			NRT			Add. Survey, Data Arrangement				Add. Survey, Data Arrangement	SDC etc.
41	2012/11/3	Sat						In-house Meeting, Data Arrangement				KIV/VIE	Meeting, Data Arrangement
42	2012/11/4	Sun						In-house Meeting, Data Arrangement				VIE/	Meeting, Data Arrangement
43	2012/11/5	Mon						Add. Survey, Data Arrangement	CNSPMU etc.			NRT	Same as Mr. Kaneko
44	2012/11/6	Tue						Add. Survey, Data Arrangement	RCH etc.				Same as Mr. Kaneko
45	2012/11/7	Wed						Add. Survey, Data Arrangement					Add. Survey, Data Arrangement
46	2012/11/8	Thu						Agency of Medical Equipment	CNSP				Agency of Medical Equipment
47	2012/11/9	Fri						MoH, Data Arrangement	MoH, CNSP				MoH
48	2012/11/10	Sat						KIV/VIE					KIV/VIE
49	2012/11/11	Sun						VIE/					VIE/
50	2012/11/12	月						NRT					NRT

Legend:

SCR	Republican Clinical Hospital/ IMSP Spitalul Clinic Republican
ICSDOSM	Scientific Research Institute in the Field of Mother and Child Health Protection/ IMSP ICŞDOSMamei şi Copilului
SCRC Em. Cotaga	Republican Clinical Hospital for Children "Em. Cotaga"/ IMSP Spitalul Clinic Republican pentru Copii „Em. Cotaga
OI	Oncologic Institute/ IMSP Institutul Oncologic

CNSPMU	National Scientific-Practical Centre for Emergency Medicine/ IMSP Centrul Național Științifico-Practic de Medicină Urgentă
Sf. Treime Hp	Municipal Clinical Hospital "Sf. Treime"/ Spitalul Clinic Municipal "Sfânta Treime"
CNSP	National Center for Public Health / Centrul Național de Sănătate Publică

2nd Field Survey

			Leader	Sectoral Officer	Country Officer	Sub Consultant Leader / Medical & Health Planner – 2	Medical Equipment Planner – 1 Planner
	Date /Month		Mr. Daimin Hanadate	Ms. Yoko Kotoura	Ms. Masako Yoshihara	Mr. Yosuke Umemiya	Mr. Akio Kaneko
1	2012/12/5	Wed				NRT/VIE	
2	2012/12/6	Thu				VIE/KIV, MoH	
3	2012/12/7	Fri				MoH, CNSP	
4	2012/12/8	Sat				Data Arrangement	
5	2012/12/9	Sun	NRT/KIV		NRT/KIV	Data Arrangement	
6	2012/12/10	Mon	MoH,MoF		Same as Leader	Same as Official Member	
7	2012/12/11	Tue	KIV/		MoH, MoF	Same as Official Member	
8	2012/12/12	Wed		NRT/KIV	MoH, MoF	Same as Official Member	
9	2012/12/13	Thu		MoH, MoF		MoH	
10	2012/12/14	Fri		MoH, MoF		MoH	
11	2012/12/15	Sat		VIE	VIE	Data Arrangement	
12	2012/12/16	Sun		NRT	NRT	Data Arrangement	
13	2012/12/17	Mon				MoH	
14	2012/12/18	Tue				MoH	
15	2012/12/19	Wed				MoH	
16	2012/12/20	Thu				MoH	
17	2012/12/21	Fri				MoH	
18	2012/12/22	Sat				KIV/VIE	
19	2012/12/23	Sun				VIE/	
20	2012/12/24	Mon				NRT	

Legend: CNSP National Center for Public Health / Centrul Naţional de Sănătate Publică

Appendix 3

3, List of Parties Concerned in the Recipient Country

Ministry of Health

	Name	Position/ Title	Office
1－1	Dr. Andrei Usatii	Minister	
1－2	Dr. Svetlana Cotelea	Head	Public Health Department
1－3	Mr. Dorin Lisii	Coordinator/Monitoring and Evaluation Consultant	Capacity Assessment and Modernisation of RCH Project
1－4	Mr. Andrei Matei	Head	Department of Health Insurance, Budgeting and Finance
1－5	Dr. Oleg Barba	General Director,	National Center for Health Management
1－6	Mr. Andrei Romanjenco	Head	Div. of Human Resource Services
1－7	Mr. Alexandru Holostenco		Div. of Human Resource Services
1－8	Mr. Laurentiu Ionesii	Project Coordinator	SDC project (OPENMEDIS,PERINAT)

Ministry of Finance

	Name	Position/ Title	Office
2－1	Mr. Veaceslav Negruta	Minister	
2－2	Ms. Maria Caraus	Vice Minister	

Agency of Medication and Medical Equipment

	Name	Position/ Title	Office
3－1	Mr. Alexandru Coman	Director	Agency of Medication and Medical Equipment

Municipal Council Chisinau, Health Department

	Name	Position/ Title	Office
4－1	Dr. Luminita Suveica	Chisinau Health Department	Municipal Council Chisinau, Health Department

Republican Clinical Hospital

	Name	Position/ Title	Office
5－1	Dr. Sergiu Popa	General Director	Republican Clinical Hospital
5－2	Dr. Sergiu Ungureanu	Head of Surgery, Deputy Director	Republican Clinical Hospital

Institute of Scientific Research in the Field of Mother and Child Protection

	Name	Position/ Title	Office
6－1	Dr. Gatcan Stefan	General Manager	Institute of Scientific Research in the Field of Mother and Child Protection
6－2	Dr. Petru Stratulat	Duputy Director	Institute of Scientific Research in the Field of Mother and Child Protection
6－3	Mr. Valeriu Palii	Chief, BME	BME Dept, Institute of Scientific Research in the Field of Mother and Child Protection

Republican Clinical Hospital for Children "Em. Coţaga"

	Name	Position/ Title	Office
7－1	Dr. Tatiana Raba	Director	Republican Clinical Hospital for Children "Em. Coţaga'
7－2	Mr. Jon Cowazvitch	BME	Republican Clinical Hospital for Children "Em. Coţaga'

Oncology Institute

	Name	Position/ Title	Office
8－1	Dr. Victor Cernat	Director	Oncology Institute
8－2	Dr. Seghei Stepa	Vice Director, Surgery compartment	Oncology Institute

National Scientific-Practical Center for Emergency Medicine

	Name	Position/ Title	Office
9－1	Dr. Gheorghe Ciobanu	Director	National Scientific-Practical Center for Emergency Medicine
9－2	Dr. Liviu VOVC	Prim-Vice director	National Scientific-Practical Center for Emergency Medicine
9－3	Mr. Gheorghe Gorceag	Chief , BME	Technologies Medical Department, National Scientific-Practical Center for Emergency Medicine

Municipal Clinical Hospital “Sfanta Treime”

	Name	Position/ Title	Office
10－1	Dr. Terente Simion	Director	Municipal Clinical Hospital “Sfanta Treime”
10－2	Dr. Gheorghe Strajescu	Vice Director, Surgical	Municipal Clinical Hospital “Sfanta Treime”

National Center for Public Health

	Name	Position/ Title	Office
11－1	Dr. Shalaru Ion	Director General	National Center for Public Health
11－2	Dr. Valeriu Pantea	Head	Science Department, National Center for Public Health
11－3	Ms. Ala	Head	Microbacteriology Lab, National Center for Public Health
11－4	Ms. Raisa	Head	Sanitary Hygenic Lab, National Center for Public Health

Technical University of Moldova

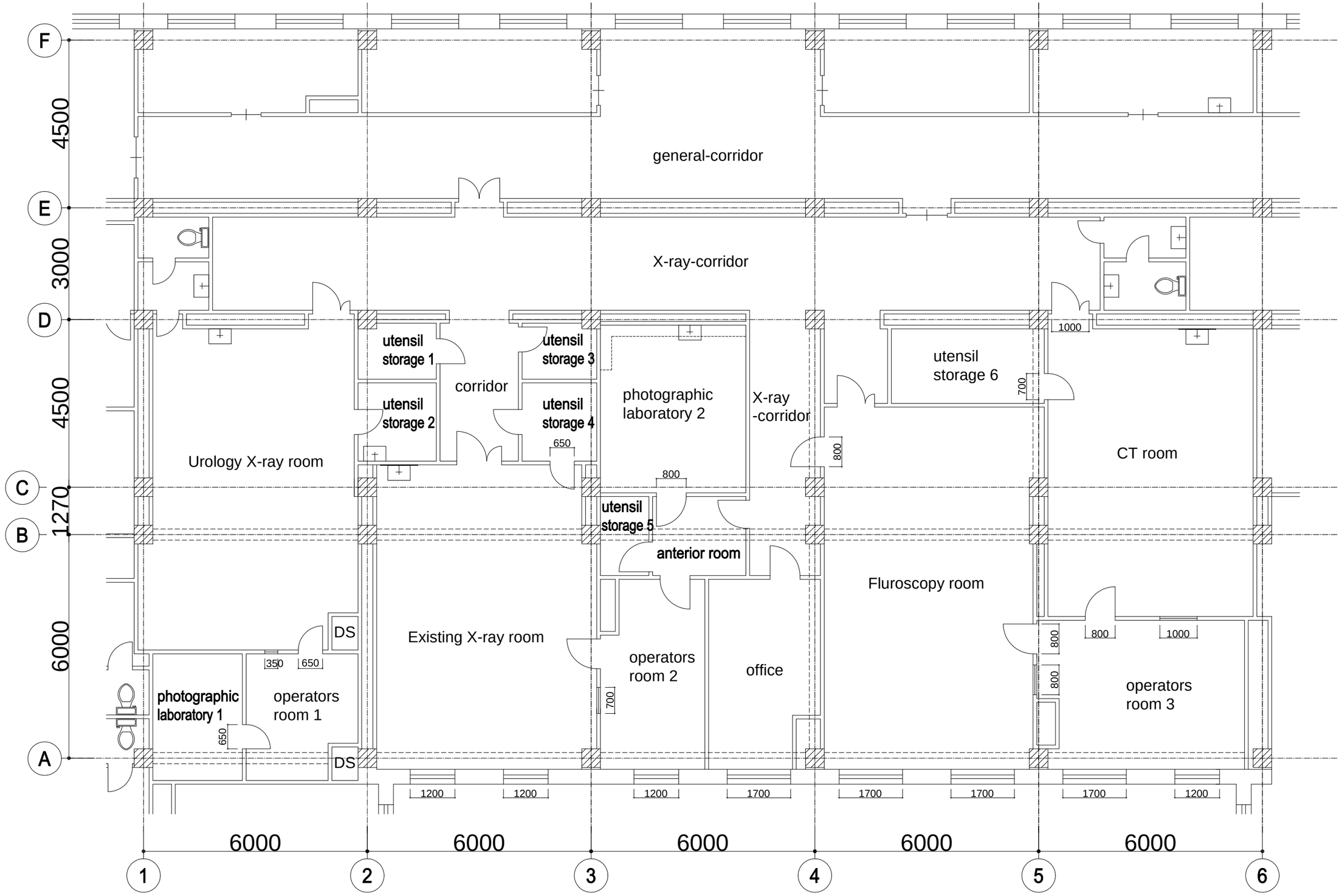
	Name	Position/ Title	Office
12－1	Dr. Victor Sontea	Professor (Microelectronics & BME)	Technical University of Moldova

Swiss Tropical and Public Health Institute (TPH)

	Name	Position/ Title	Office
13－1	Mr. Reinhold Werlein	BME, Senior Health Technology Specialist	Swiss TPH
13－2	Dr. Silvia Morgoci	Project Coordinator	REPEMOL

Swiss Agency for Development and Cooperation (SDC)

	Name	Position/ Title	Office
14－1	Mr. Valeriu Sava	National Program Officer	SDC
14－2	Ms. Viorica Cretu	Deputy Country Director	SDC



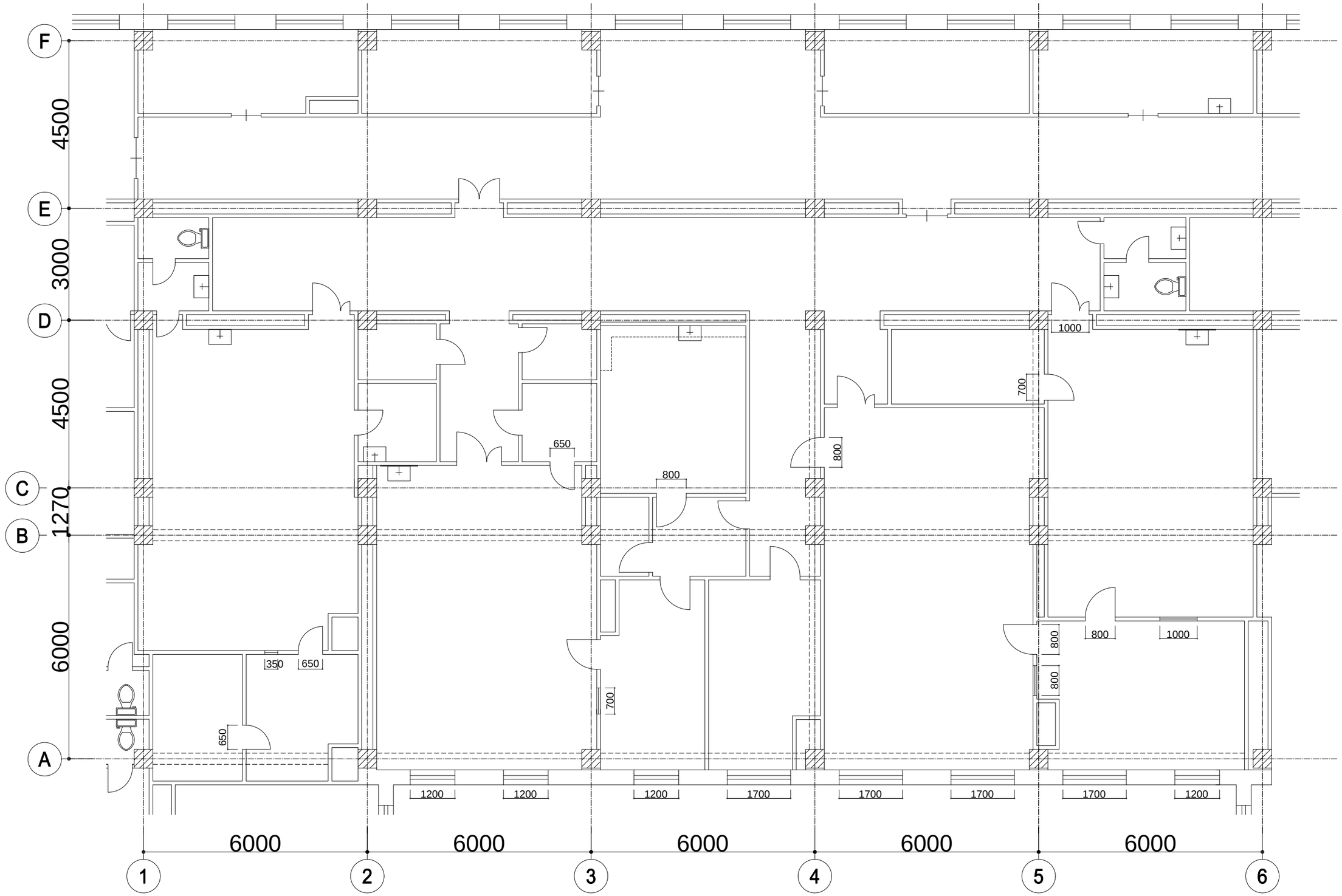
current plan

2013.01.30

Fujita Planning Co.,Ltd.	YOKOGAWA ARCHITECTS & ENGINEERS,INC.	THE PROJECT FOR IMPROVEMENT OF MEDICAL CARE SERVICE IN THE REPUBLIC OF MOLDOVA	TITLE Mother & Child Hospital 1F X-ray, CT Current Plan	Number of Drawing M-01-1 Scale A3 1: 100

Scientific Research Institute in the Field of Mother and Child Health Protection

Appendix4-1 (1/8)



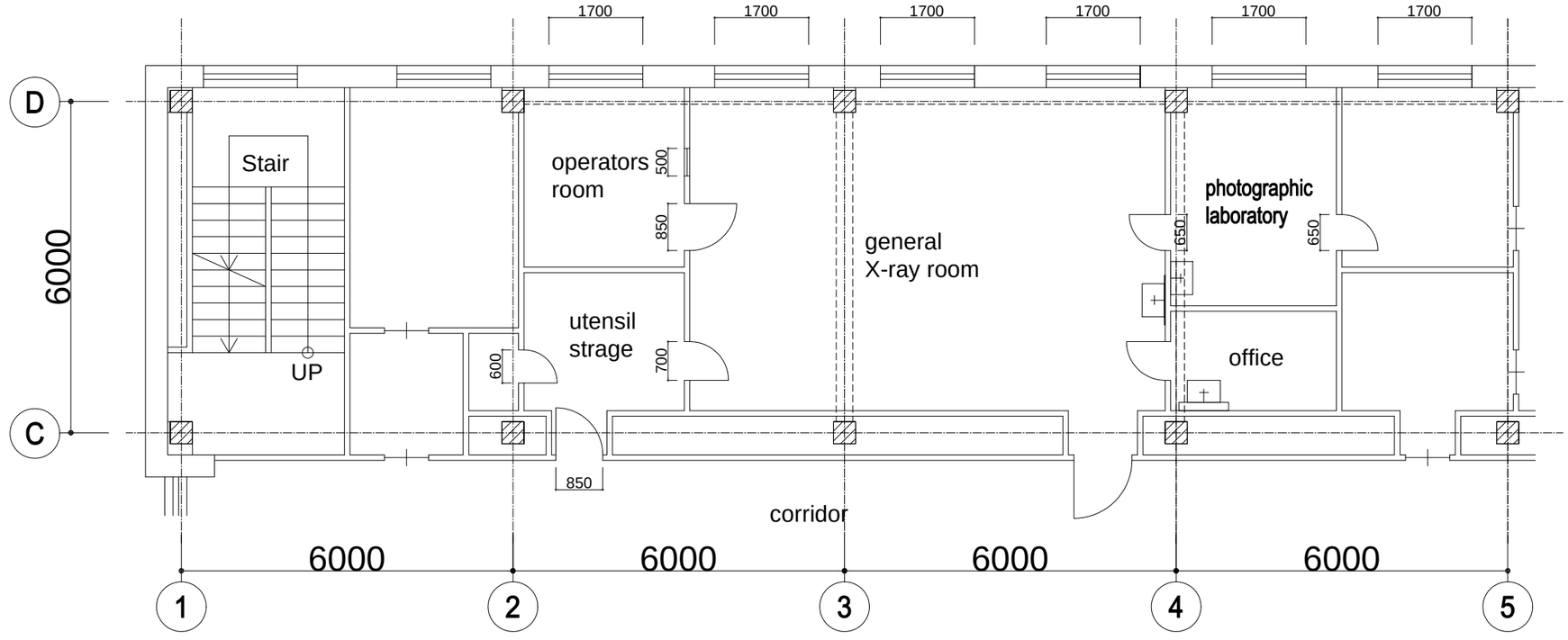
Mother & Child Hospital 1F X-ray, CT Plan

2013.01.30

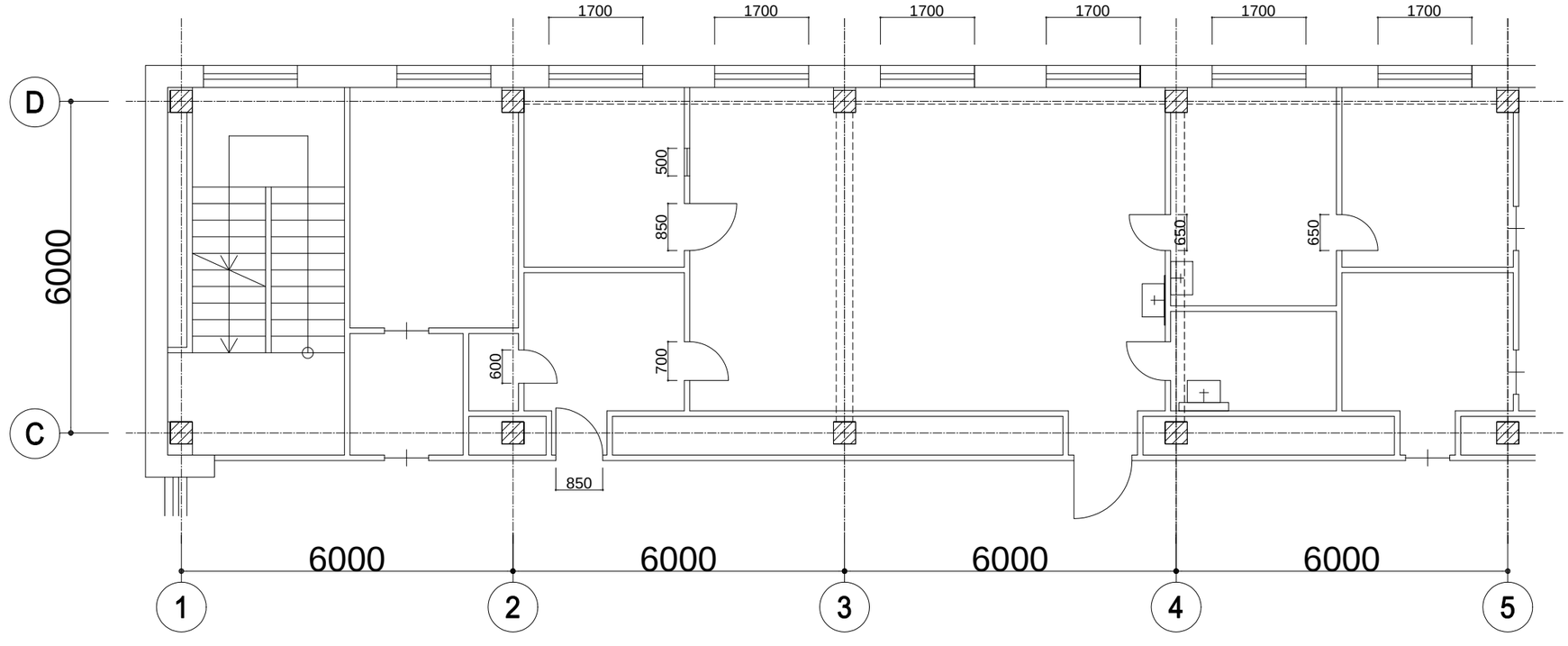
Fujita Planning Co.,Ltd.	YOKOGAWA ARCHITECTS & ENGINEERS,INC.	THE PROJECT FOR IMPROVEMENT OF MEDICAL CARE SERVICE IN THE REPUBLIC OF MOLDOVA	TITLE Mother & Child Hospital 1F X-ray, CT Plan	Number of Drawing M-01-2 / Scale A3 1: 100

Scientific Research Institute in the Field of Mother and Child Health Protection

Appendix4-1 (2/8)



current plan



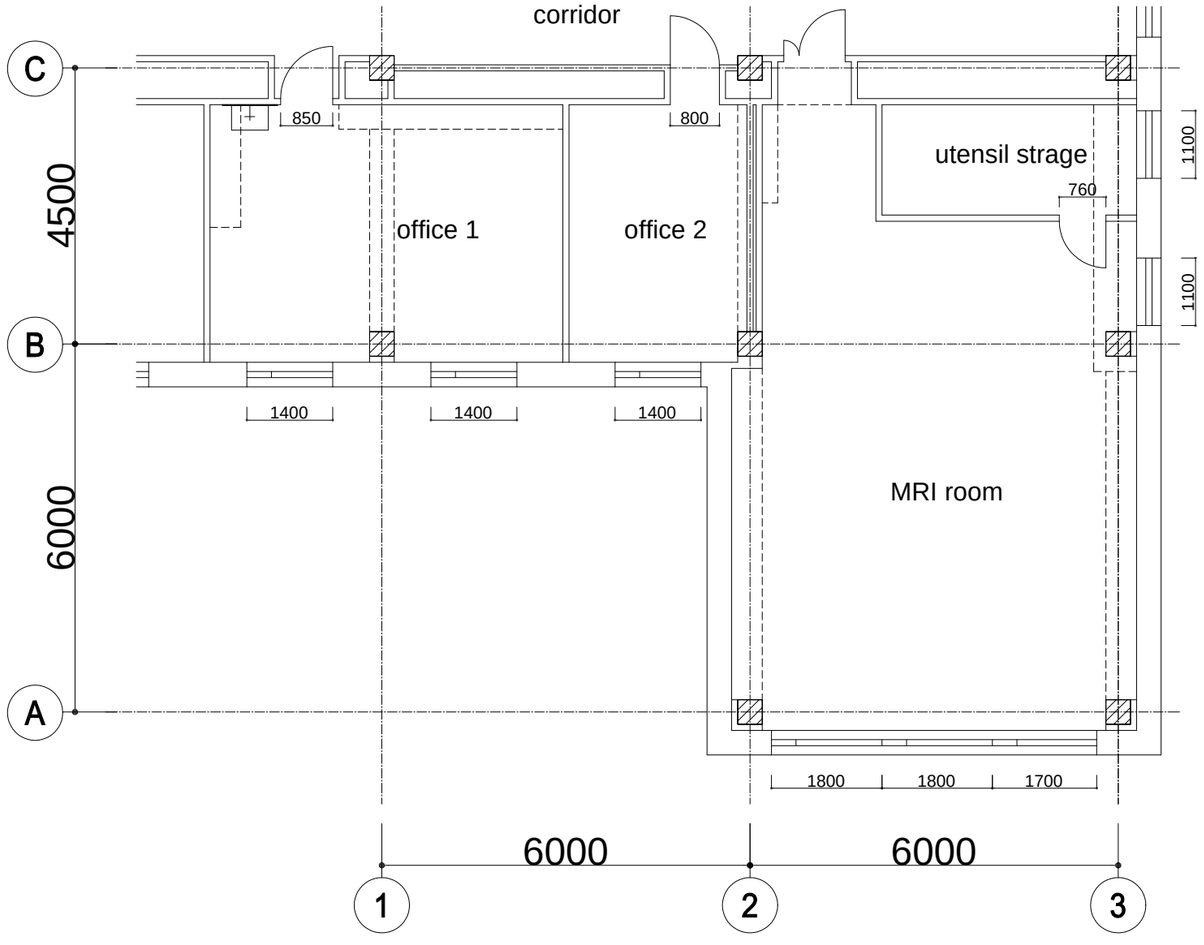
Mother & Child Hospital 4F General X-ray Room Plan

2013.01.30

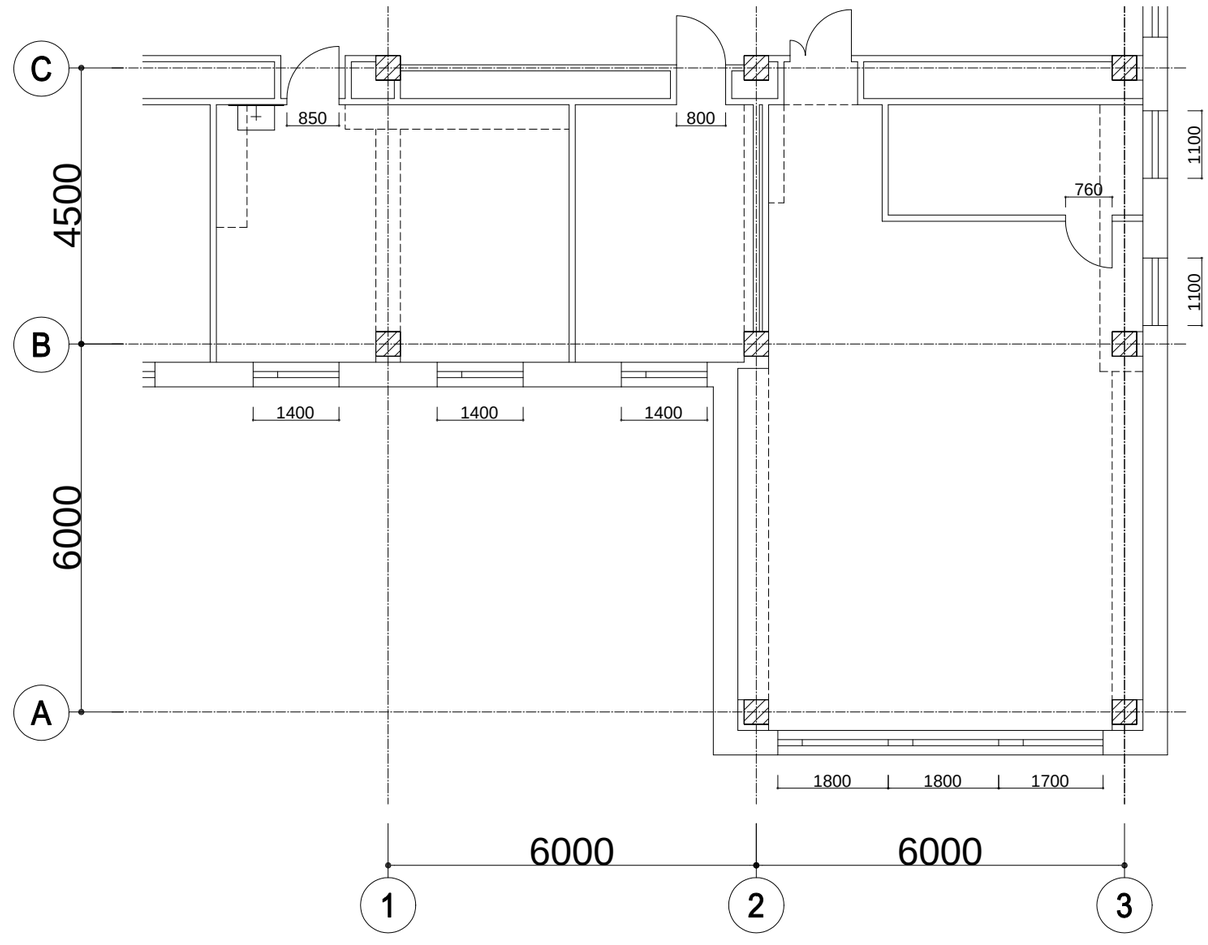
Fujita Planning Co.,Ltd.	YOKOGAWA ARCHITECTS & ENGINEERS,INC.	THE PROJECT FOR IMPROVEMENT OF MEDICAL CARE SERVICE IN THE REPUBLIC OF MOLDOVA	TITLE Mother & Child Hospital 4F General X-ray Room PLAN	Number of Drawing M-02 / Scale A3 1: 100

Scientific Research Institute in the Field of Mother and Child Health Protection

Appendix4-1 (3/8)



current plan



Mother & Child Hospital 1F MRI Room Plan

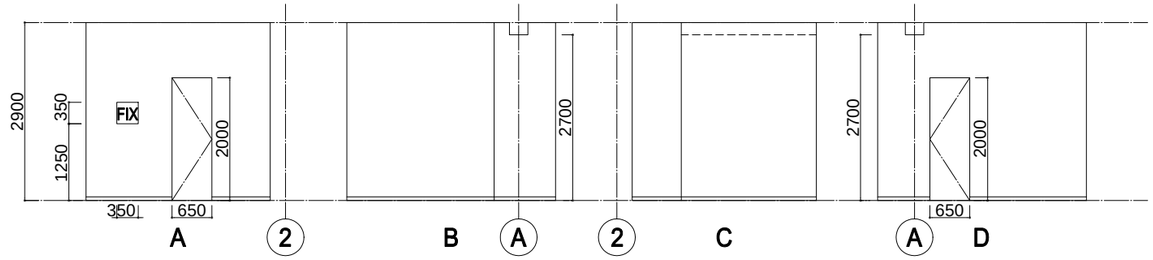
Scientific Research Institute in the Field of Mother and Child Health Protection

Appendix4-1 (4/8)

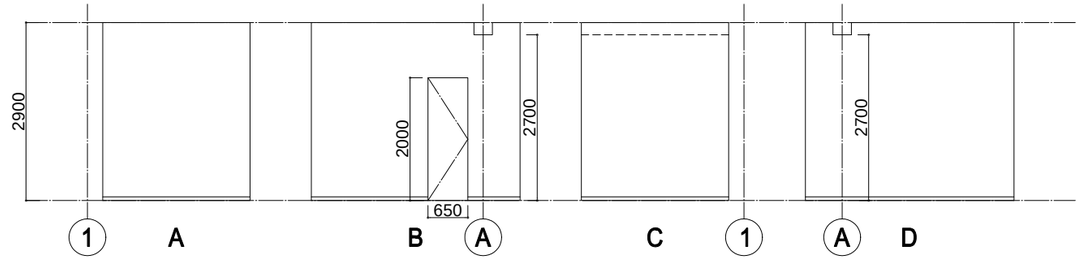
2013.01.30

Fujita Planning Co.,Ltd.	YOKOGAWA ARCHITECTS & ENGINEERS,INC.	THE PROJECT FOR IMPROVEMENT OF MEDICAL CARE SERVICE IN THE REPUBLIC OF MOLDOVA	TITLE Mother & Child Hospital 1F MRI Room PLAN	Number of Drawing M-03
				Scale A3 1: 100

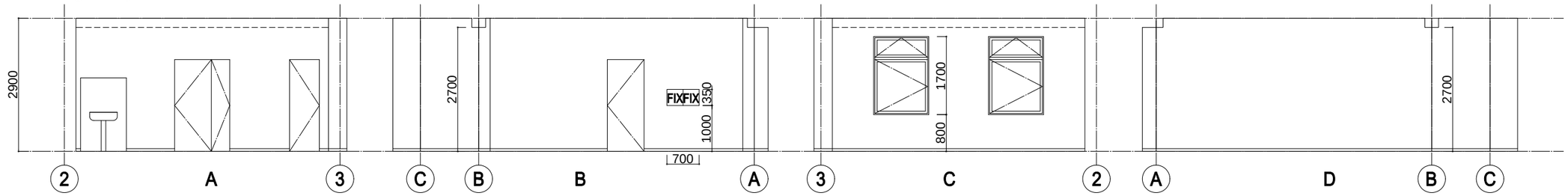
operators room 1



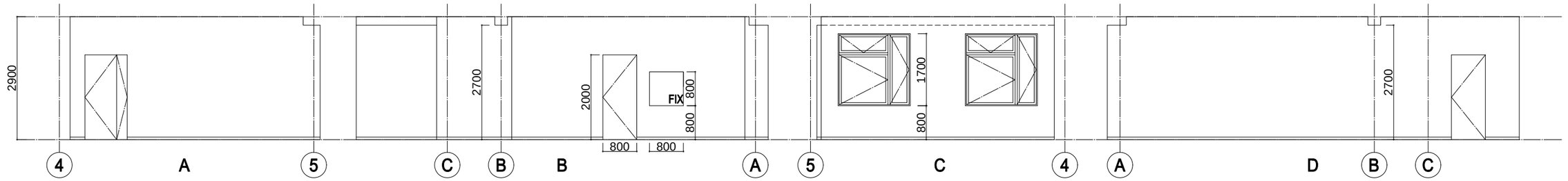
photographic laboratory 1



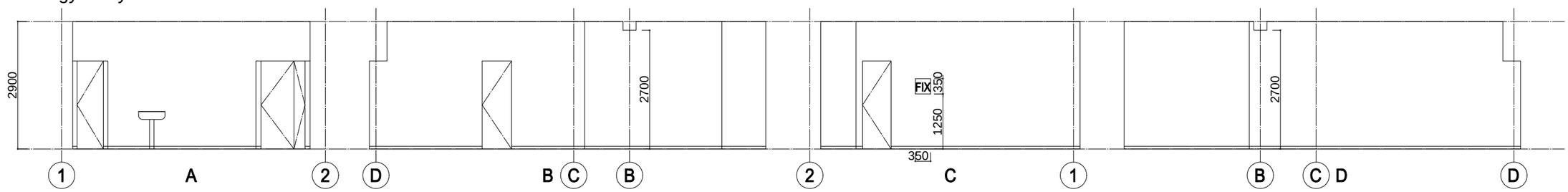
existing X-ray room



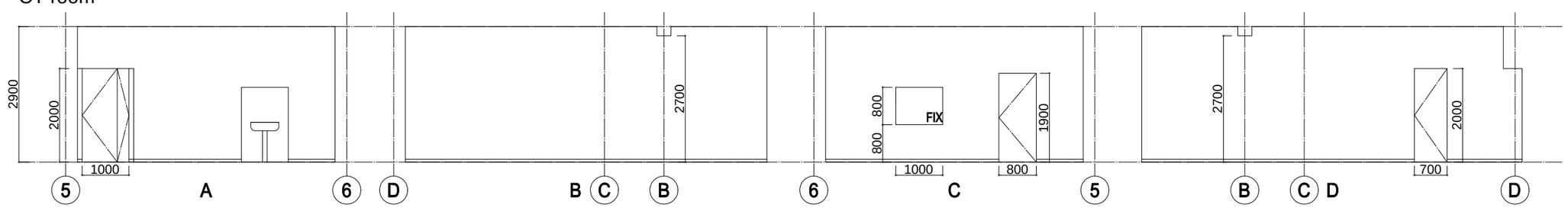
Fluroscopy room

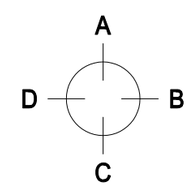


urology X-ray room



CT room





2013.01.30

Fujita Planning Co.,Ltd.

YOKOGAWA ARCHITECTS & ENGINEERS,INC.

THE PROJECT FOR IMPROVEMENT OF MEDICAL CARE SERVICE
IN THE REPUBLIC OF MOLDOVA

TITLE
Mother & Child Hospital
1F X-ray, CT ELEVATION 1

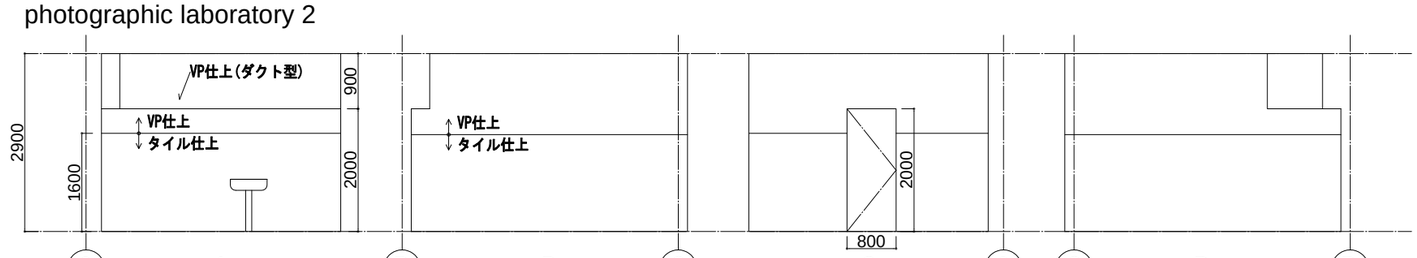
Number of Drawing
M-04-1

Scale
A3 1: 100

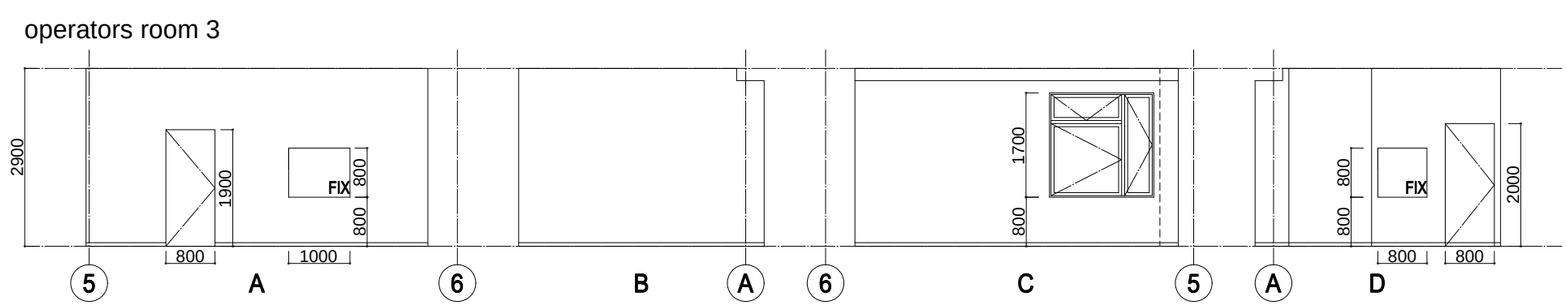
Scientific Research Institute in the Field of Mother and Child Health Protection

Appendix4-1
(5/8)

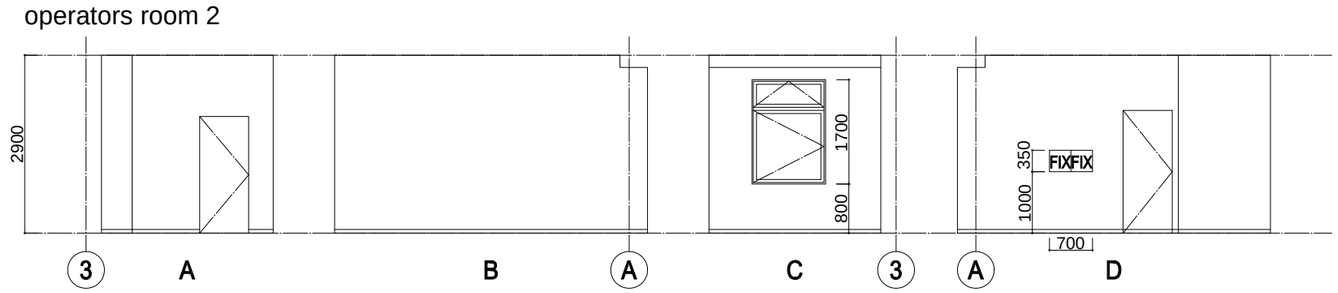
photographic laboratory 2



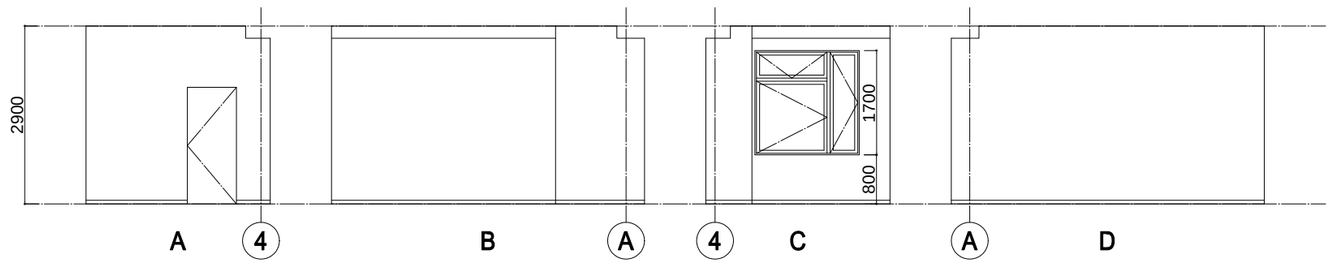
operators room 3



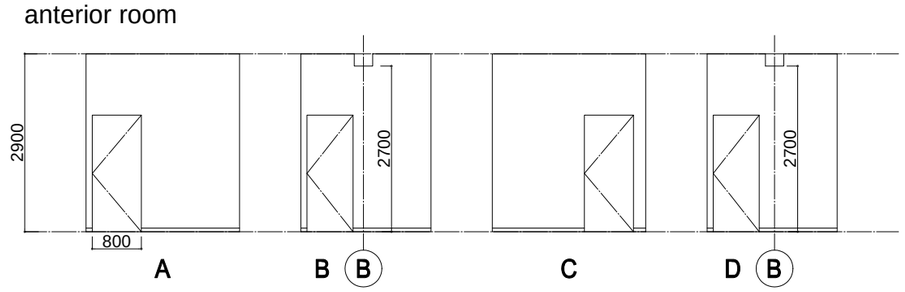
operators room 2



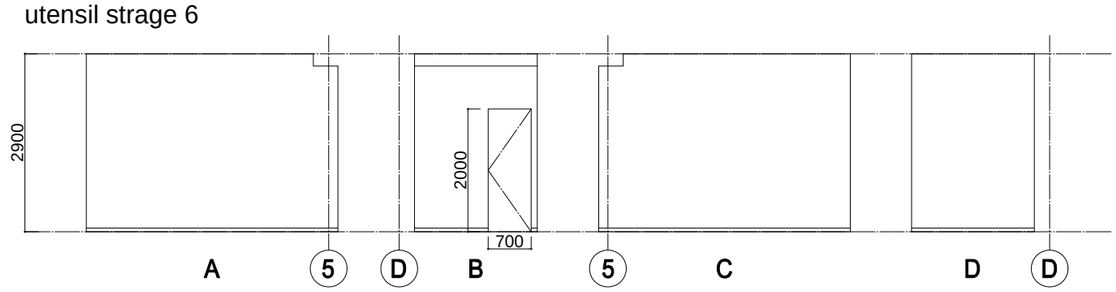
office

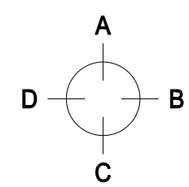


anterior room



utensil strage 6





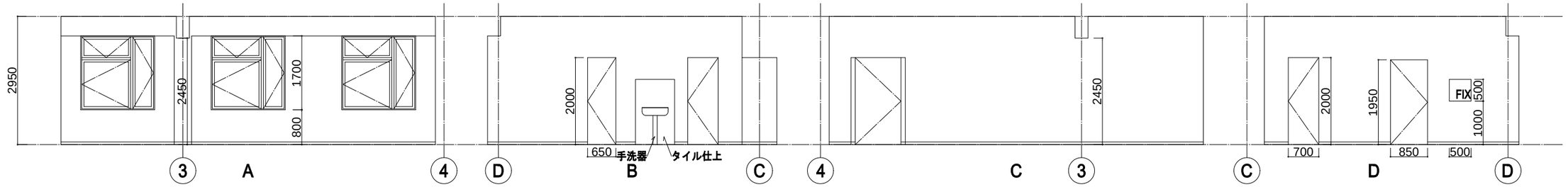
2013.01.30

Fujita Planning Co.,Ltd.	YOKOGAWA ARCHITECTS & ENGINEERS,INC.	THE PROJECT FOR IMPROVEMENT OF MEDICAL CARE SERVICE IN THE REPUBLIC OF MOLDOVA	TITLE: Mother & Child Hospital 1F X-ray, CT ELEVATION 2	Number of Drawing: M-04-2 / Scale: A3 1: 100

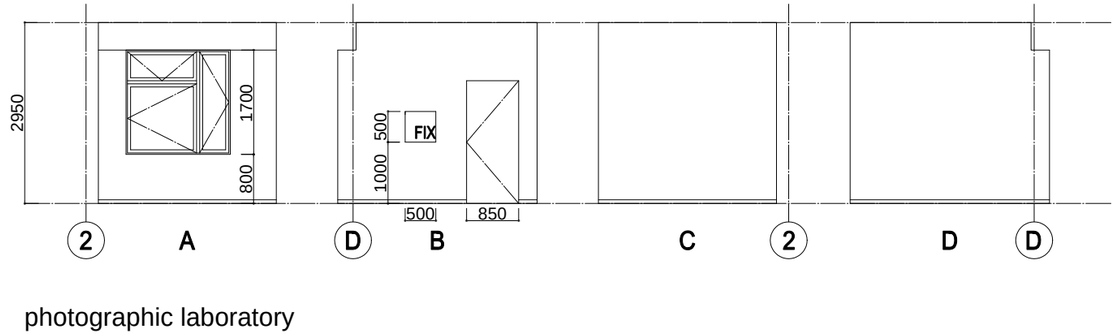
Scientific Research Institute in the Field of Mother and Child Health Protection

Appendix4-1 (6/8)

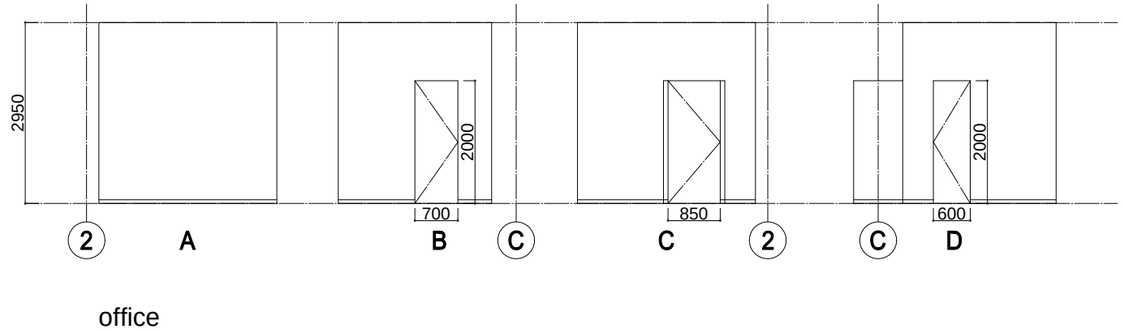
general X-ray room



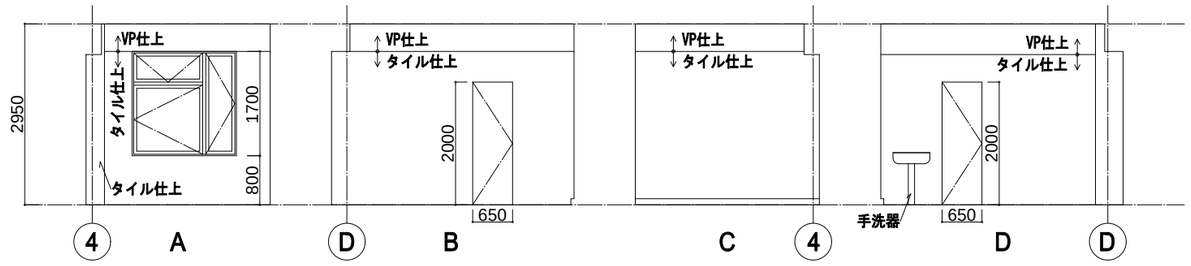
operators room



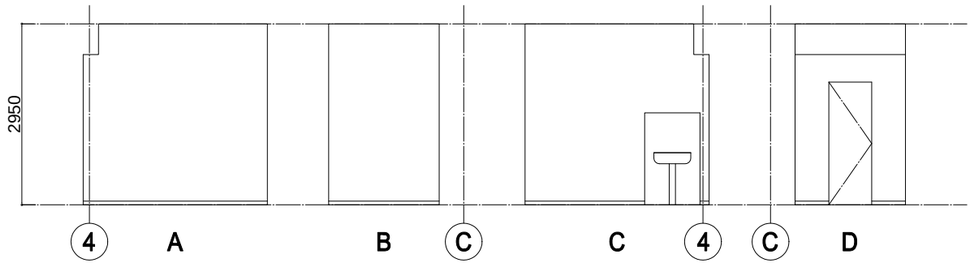
operators room

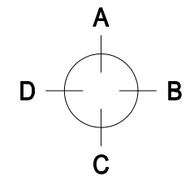


photographic laboratory



office





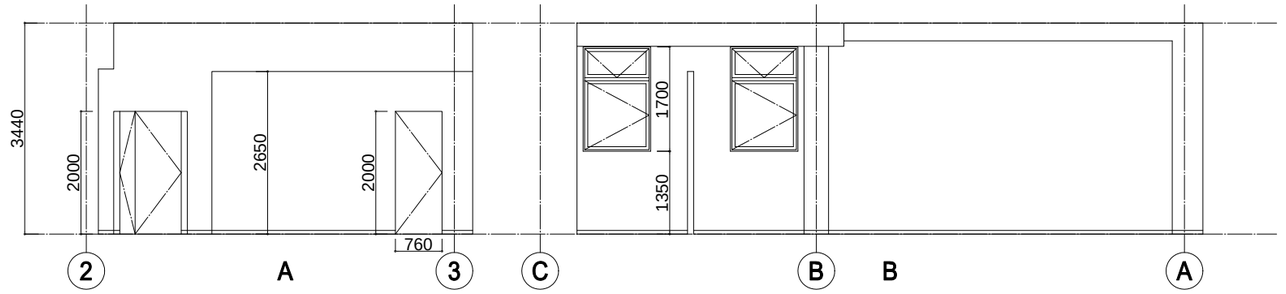
Scientific Research Institute in the Field of Mother and Child Health Protection

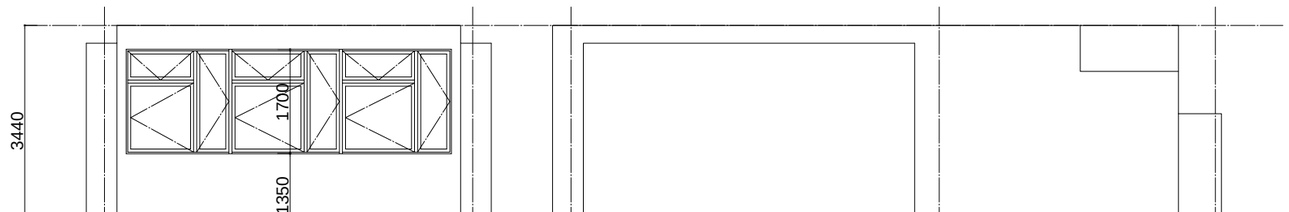
Appendix4-1 (7/8)

2013.01.30

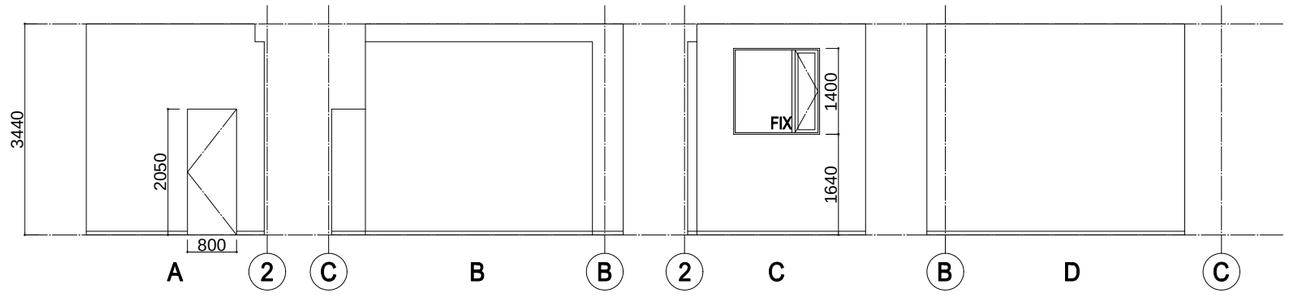
Fujita Planning Co.,Ltd.	YOKOGAWA ARCHITECTS & ENGINEERS,INC.	THE PROJECT FOR IMPROVEMENT OF MEDICAL CARE SERVICE IN THE REPUBLIC OF MOLDOVA	TITLE: Mother & Child Hospital 4F General X-ray Room ELEVATION	Number of Drawing: M-05 / Scale: A3 1: 100

MRI room

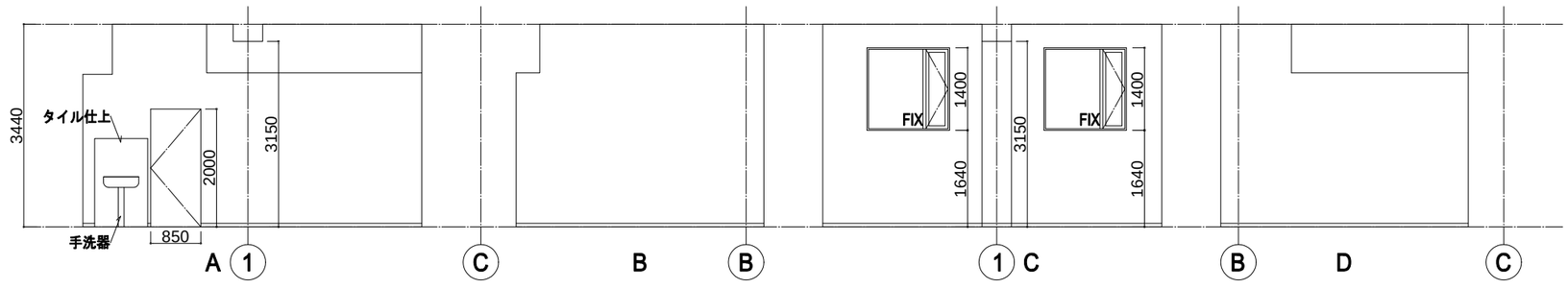


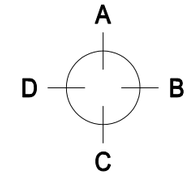


office 2



office 1





Scientific Research Institute in the Field of Mother and Child Health Protection

Appendix4-1 (8/8)

2013.01.30

Fujita Planning Co.,Ltd.	YOKOGAWA ARCHITECTS & ENGINEERS,INC.	THE PROJECT FOR IMPROVEMENT OF MEDICAL CARE SERVICE IN THE REPUBLIC OF MOLDOVA	TITLE: Mother & Child Hospital 1F MRI Room ELEVATION	Number of Drawing: M-06
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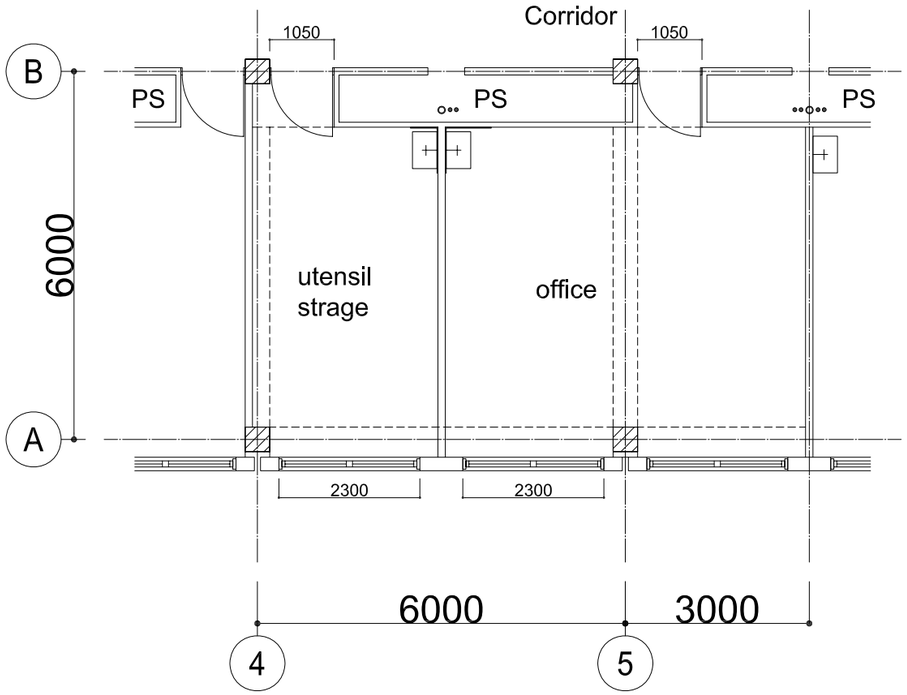
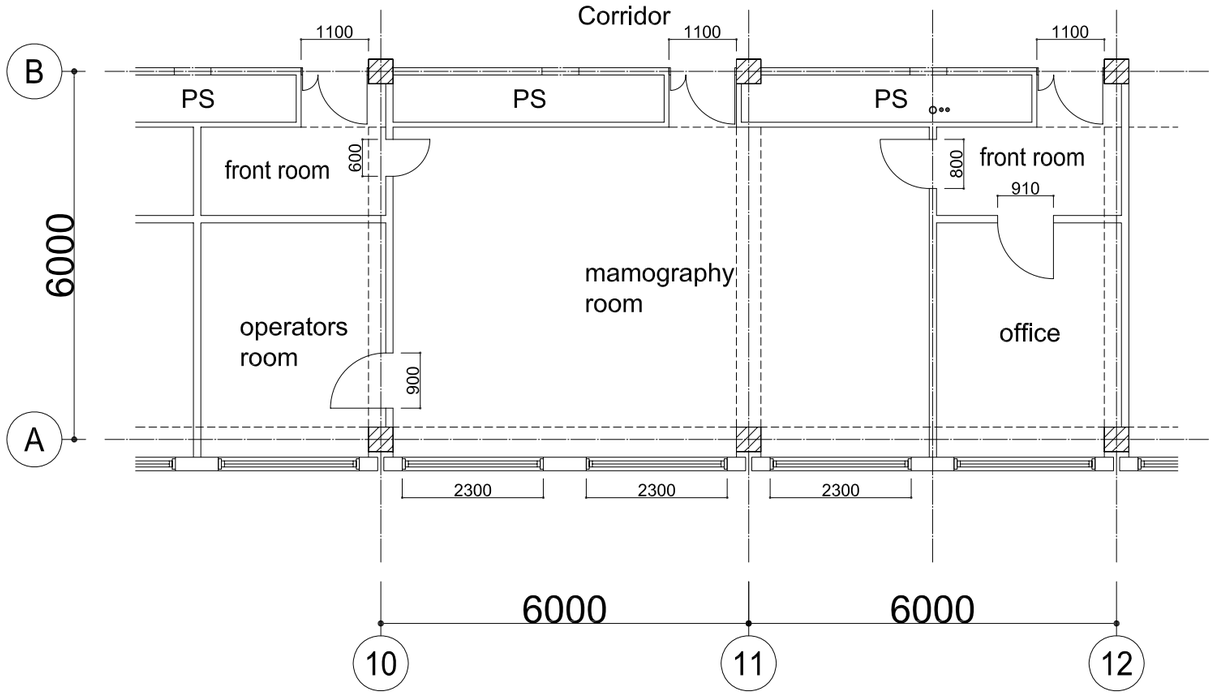
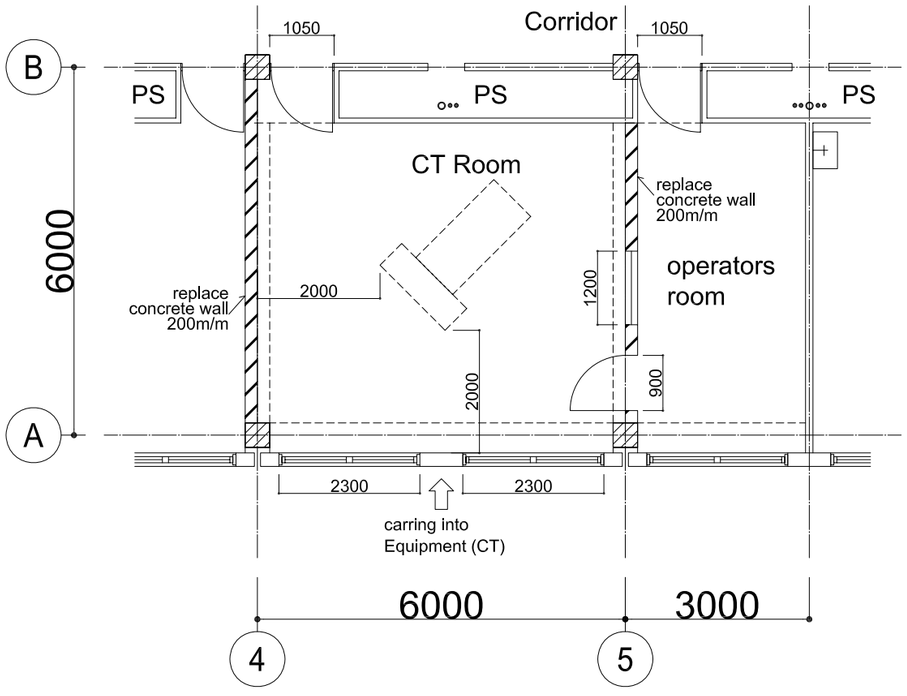


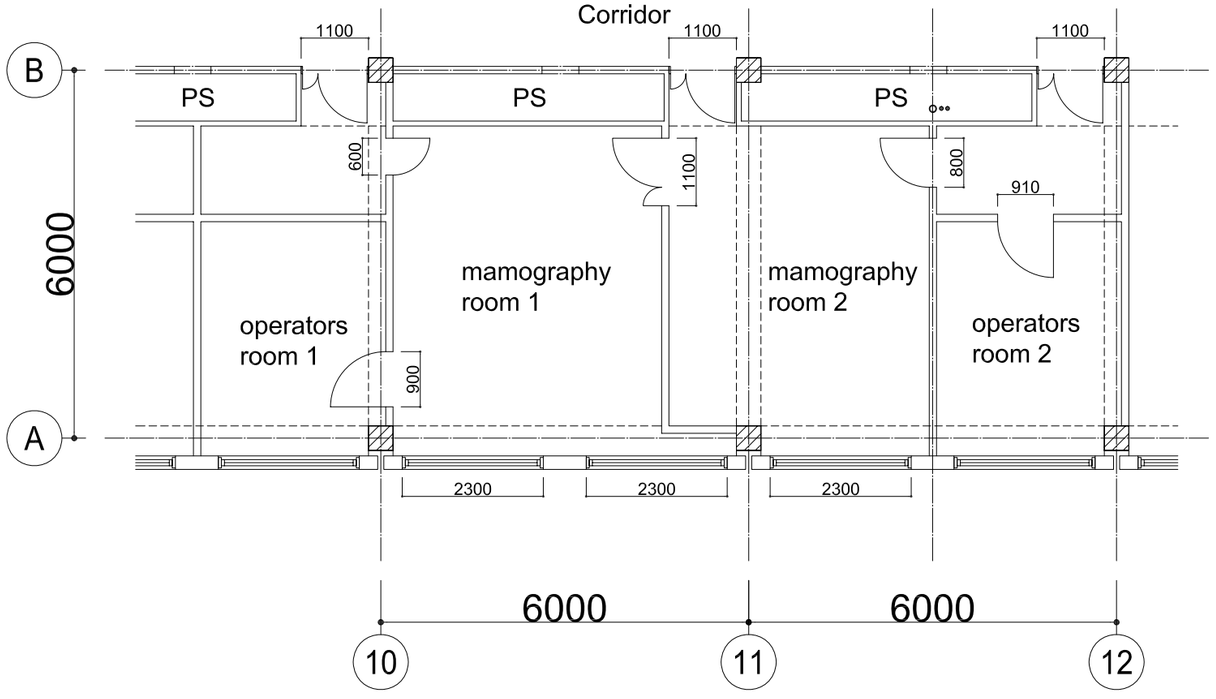
current plan



current plan



Policlinic Building 1F CT Room Plan



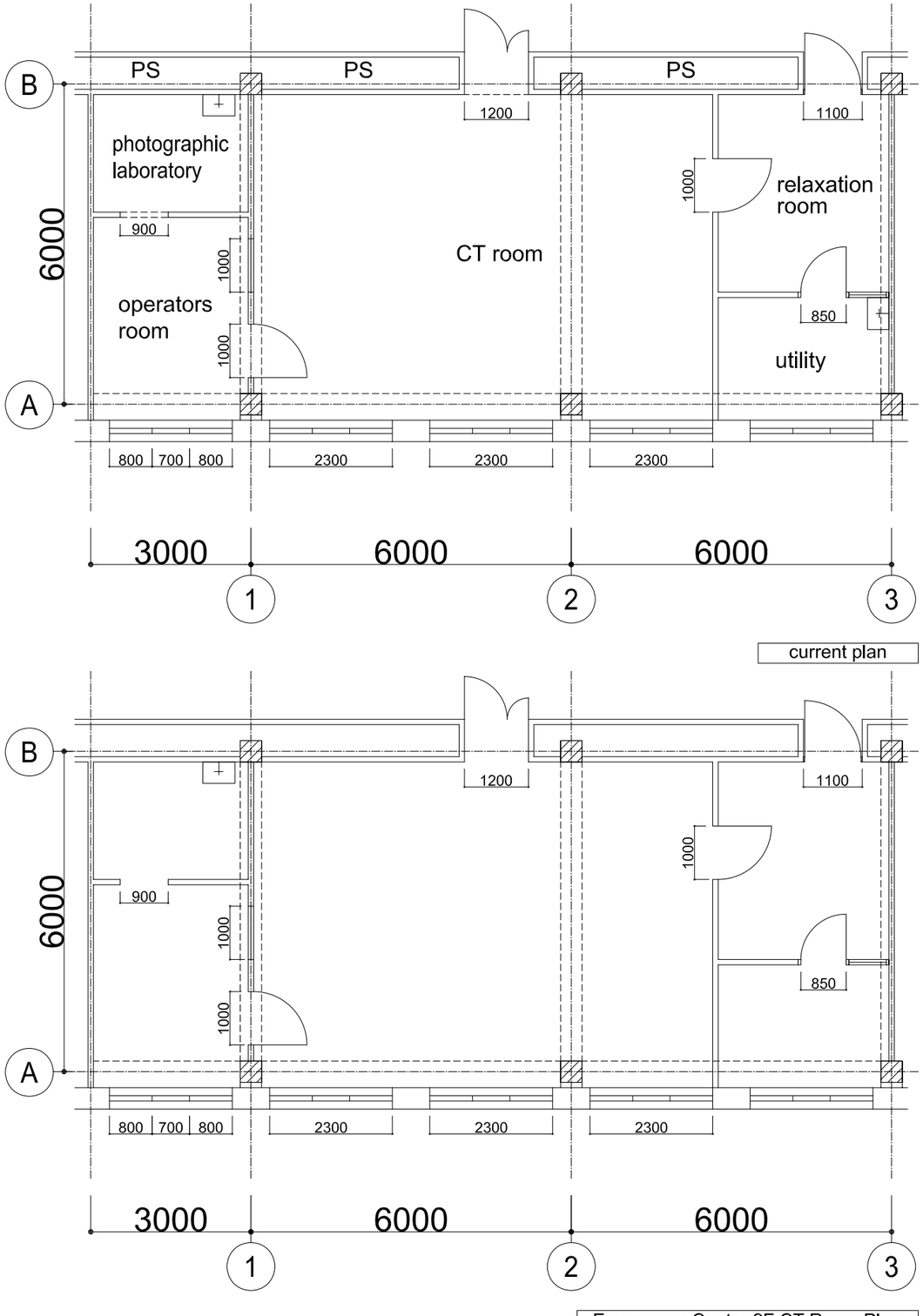
Policlinic Building 4F Mamography Room Plan

Oncologic Institute

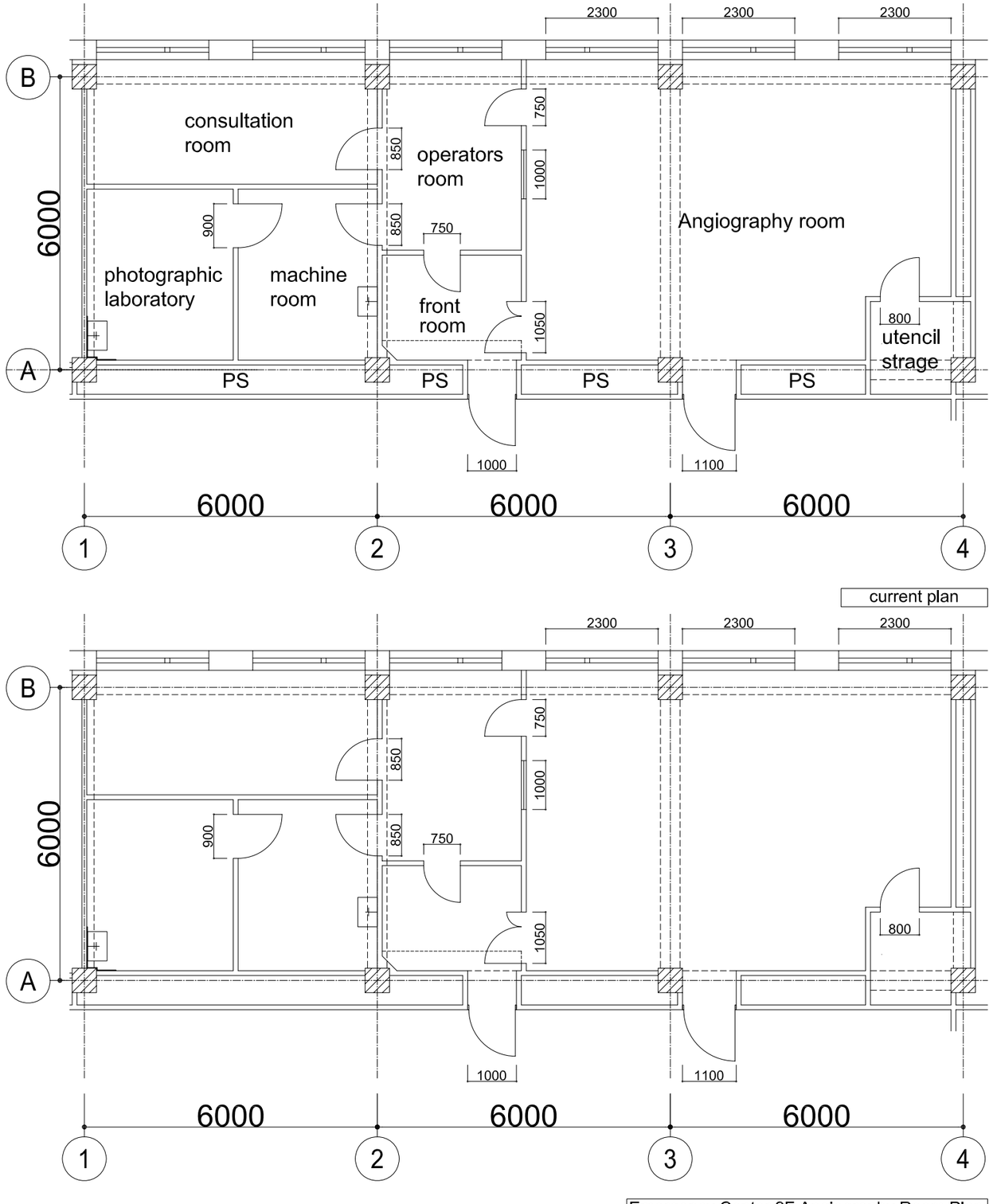
Appendix4-3
(1)

2013.01.30

Fujita Planning Co.,Ltd.	YOKOGAWA ARCHITECTS & ENGINEERS,INC.	THE PROJECT FOR IMPROVEMENT OF MEDICAL CARE SERVICE IN THE REPUBLIC OF MOLDOVA	TITLE Oncology Institute Policlinic Buiding 1F CT Room & 4F Mamography Room PLAN	Number of Drawing O-01 Scale A3 1: 100



current plan



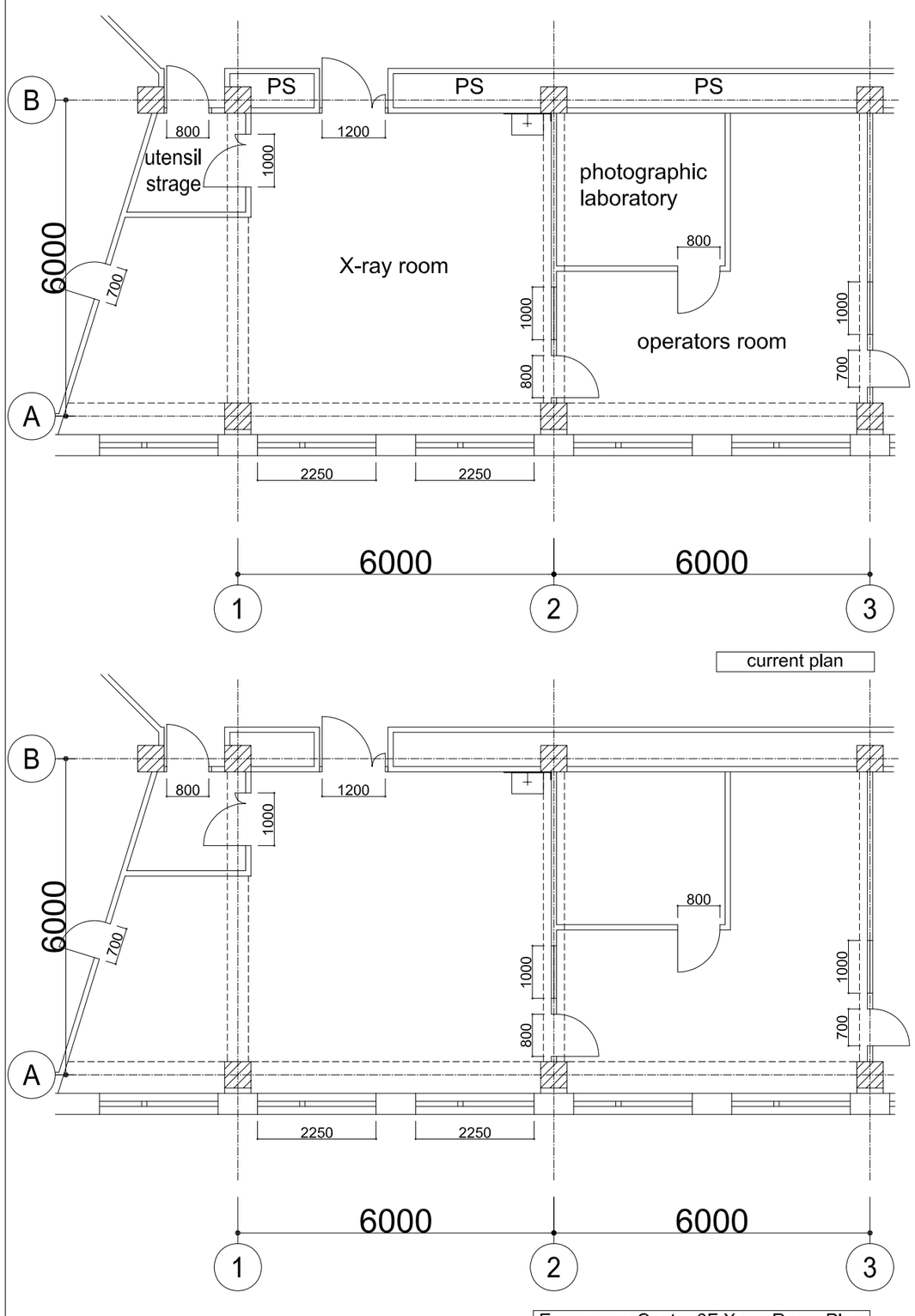
current plan

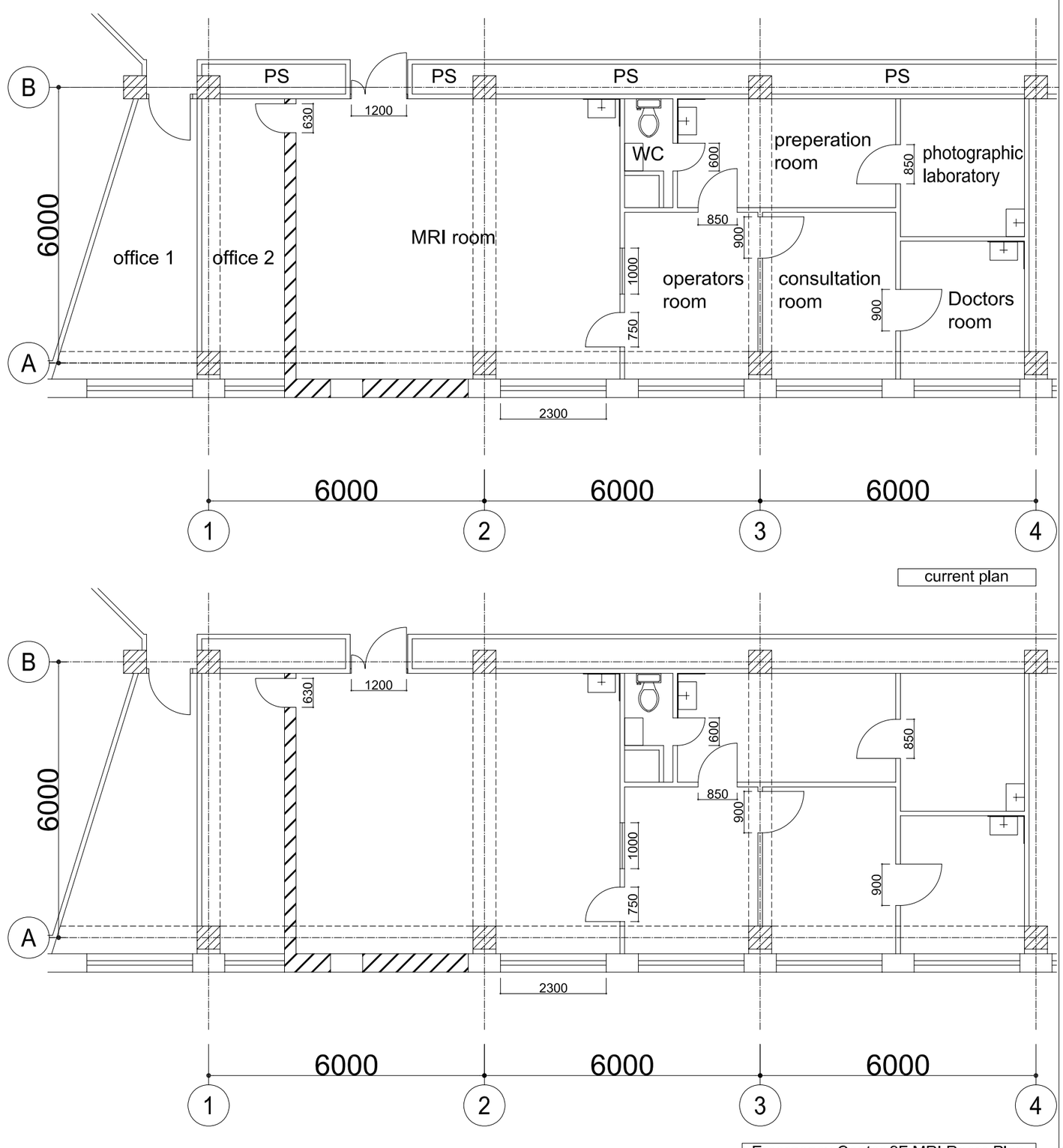
Emergency Center 2F CT Room Plan

Emergency Center 2F Angiography Room Plan

2013.01.30

Fujita Planning Co.,Ltd.	YOKOGAWA ARCHITECTS & ENGINEERS,INC.	THE PROJECT FOR IMPROVEMENT OF MEDICAL CARE SERVICE IN THE REPUBLIC OF MOLDOVA	TITLE Emergency Center 2F CT Room & Angiography Room PLAN	Number of Drawing E-01 Scale A3 1: 100





Emergency Center 3F X-ray Room Plan

Emergency Center 2F MRI Room Plan

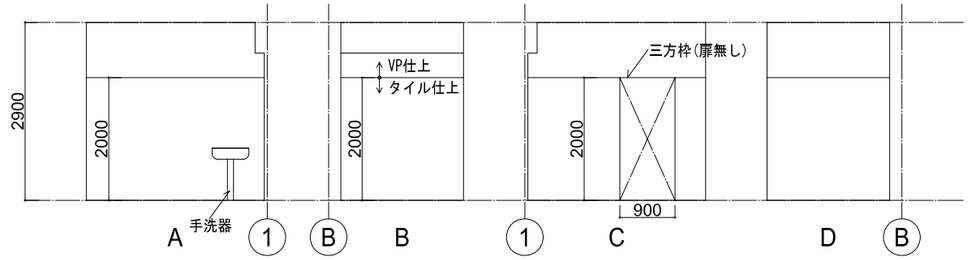
2013.01.30

Fujita Planning Co.,Ltd.	YOKOGAWA ARCHITECTS & ENGINEERS,INC.	THE PROJECT FOR IMPROVEMENT OF MEDICAL CARE SERVICE IN THE REPUBLIC OF MOLDOVA	TITLE: Emergency Center 3F X-ray Room & 2F MRI Room PLAN	Number of Drawing: E-02 / Scale: A3 1: 100

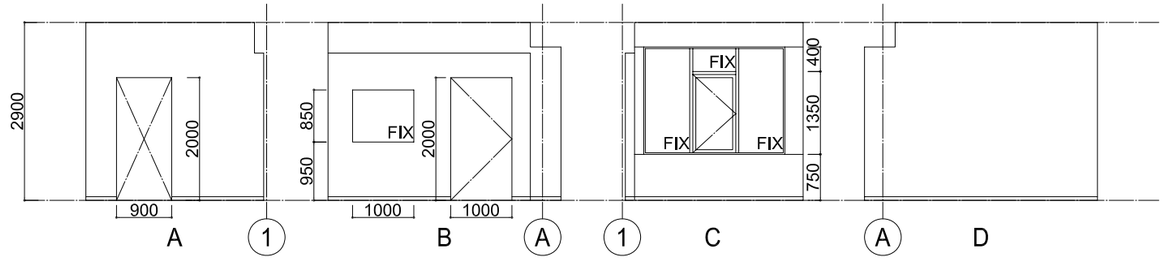
National Scientific-Practical Center for Emergency Medicine

Appendix4-3 (2/6)

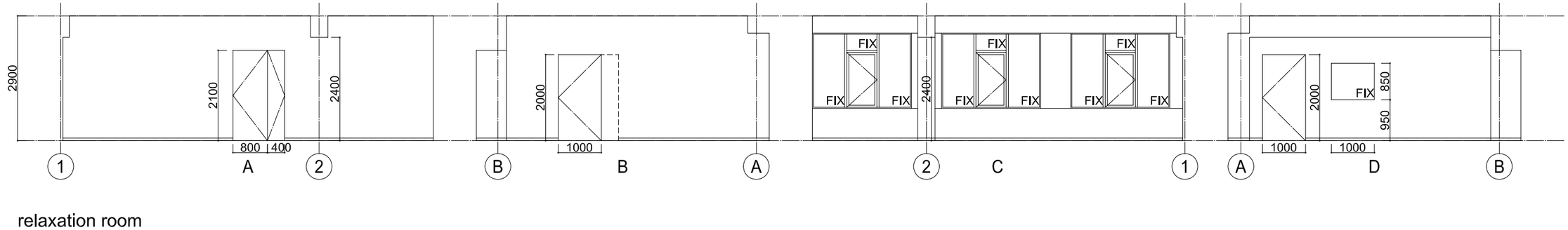
photographic laboratory



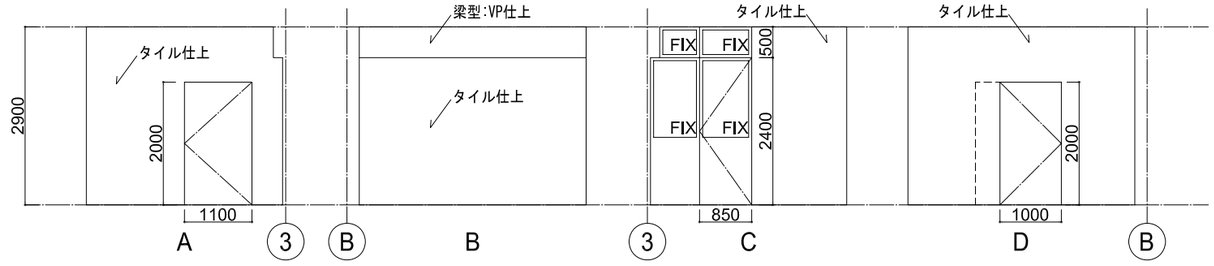
operators room



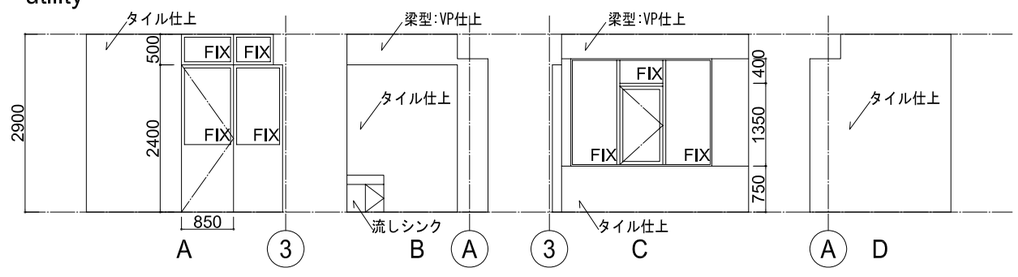
CT room

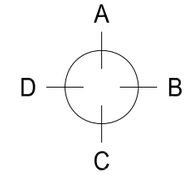


relaxation room



utility





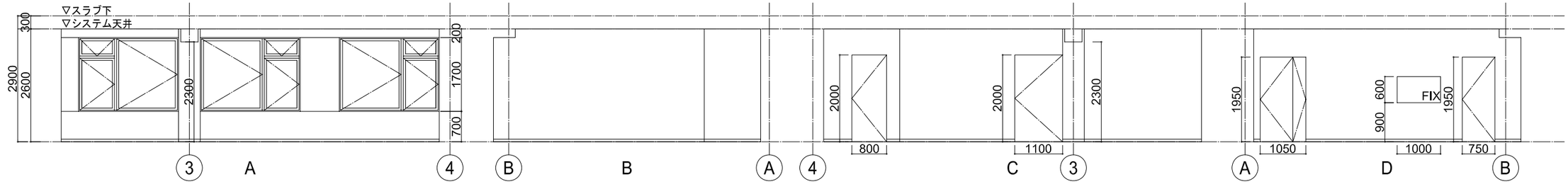
National Scientific-Practical Center for Emergency Medicine

Appendix4-3 (3/6)

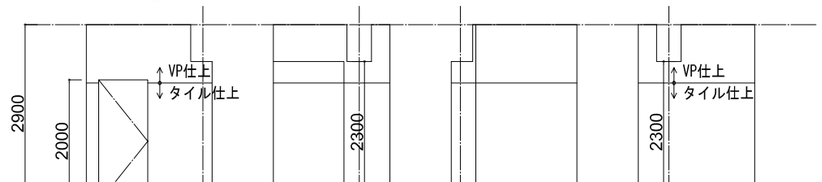
2013.01.30

Fujita Planning Co.,Ltd.	YOKOGAWA ARCHITECTS & ENGINEERS,INC.	THE PROJECT FOR IMPROVEMENT OF MEDICAL CARE SERVICE IN THE REPUBLIC OF MOLDOVA	TITLE: Emergency Center 2F CT Room ELEVATION	Number of Drawing: E-03 / Scale A3 1: 100

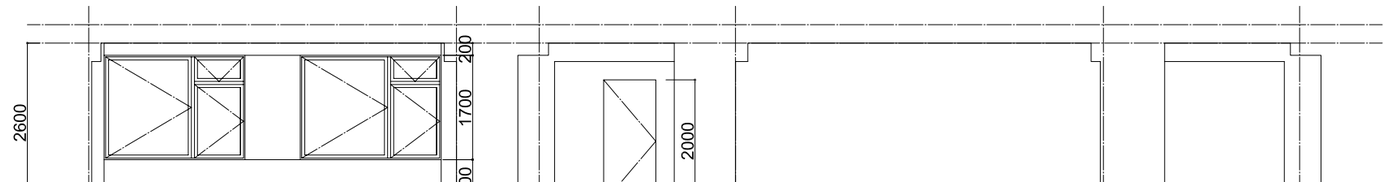
Angiography room



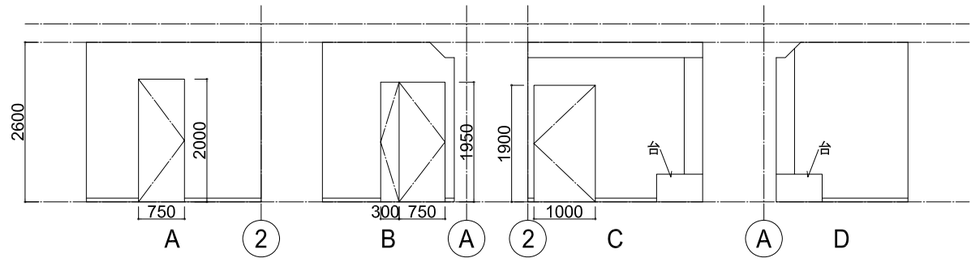
utensil strage



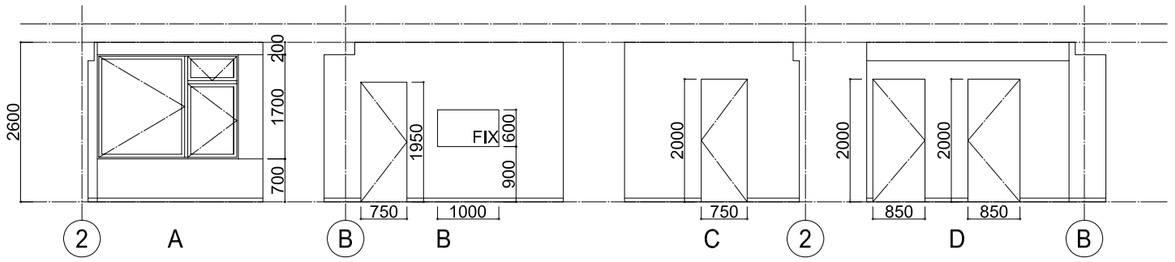
consultation room



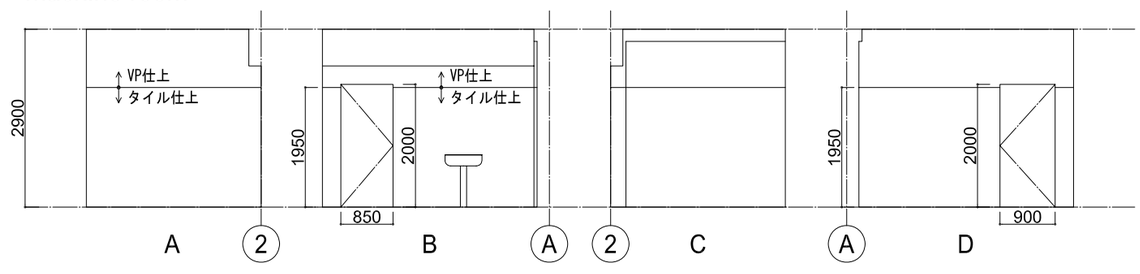
front room



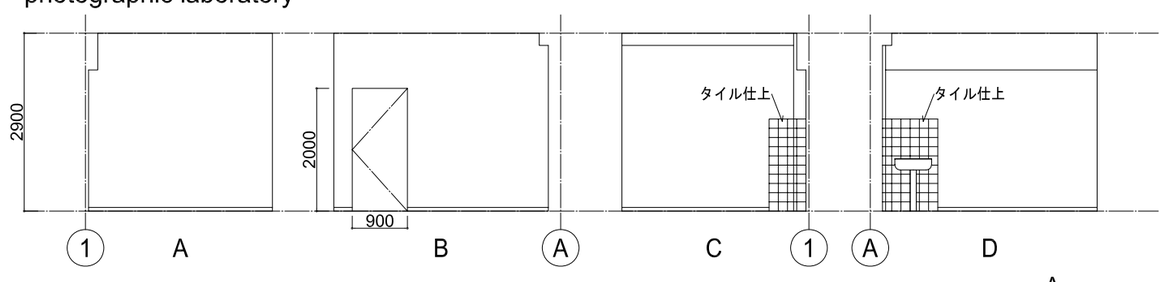
operators room

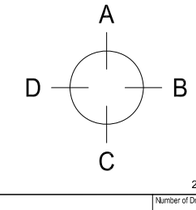


machine room



photographic laboratory





2013.01.30

Fujita Planning Co.,Ltd.

YOKOGAWA ARCHITECTS & ENGINEERS,INC.

THE PROJECT FOR IMPROVEMENT OF MEDICAL CARE SERVICE
IN THE REPUBLIC OF MOLDOVA

TITLE
Emergency Center
2F Angiography Room ELEVATION

Number of Drawing
E-04

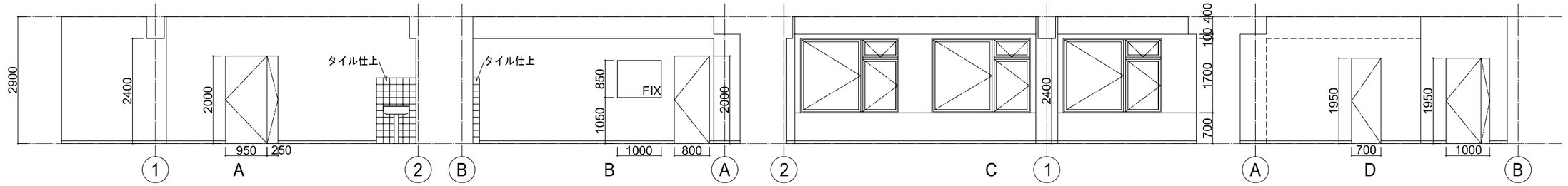
Scale
A3 1: 100

National Scientific-Practical Center for Emergency Medicine

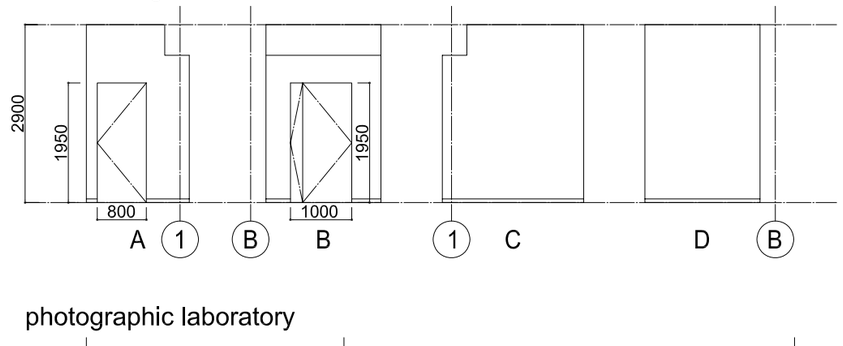
Appendix4-3
(4/6)

注：X-rayエリアの扉は、スチールフラッシュ戸を使っていた

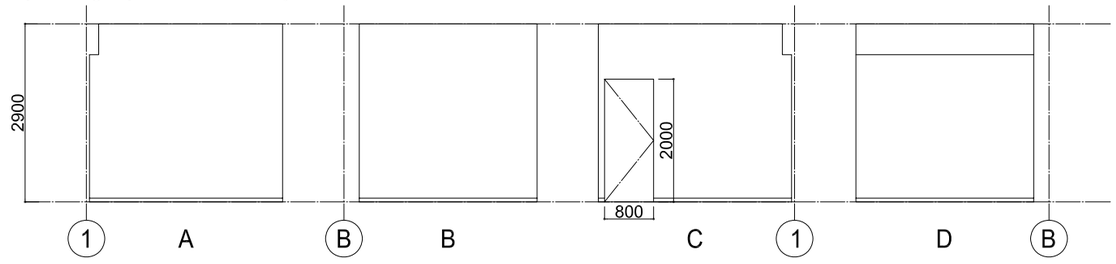
X-ray room



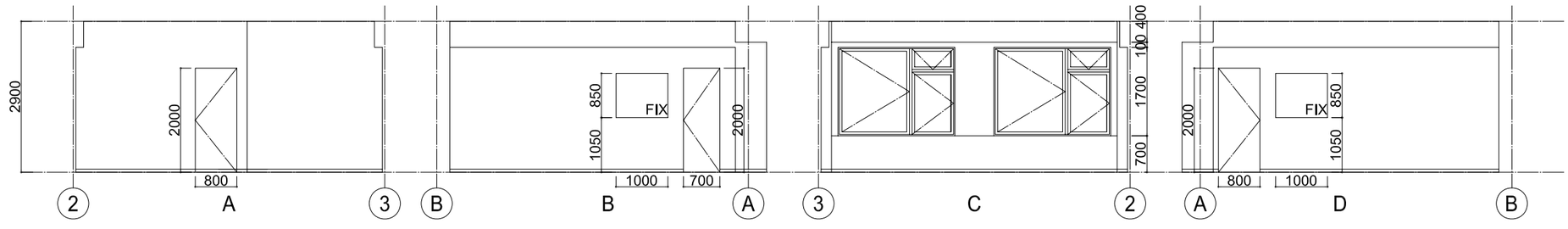
utensil strage

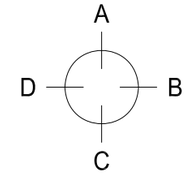


photographic laboratory



operators room





National Scientific-Practical Center for Emergency Medicine

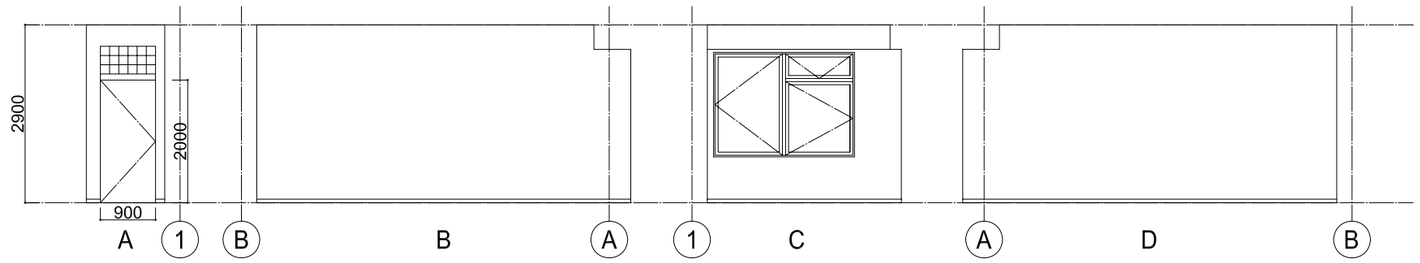
Appendix4-3 (5/6)

2013.01.30

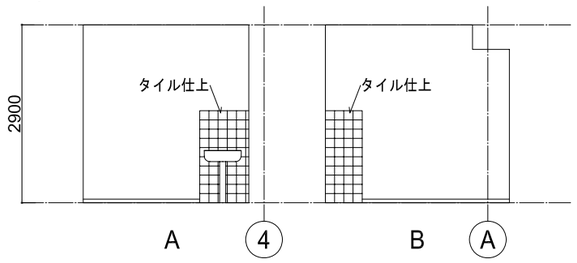
Fujita Planning Co.,Ltd.	YOKOGAWA ARCHITECTS & ENGINEERS,INC.	THE PROJECT FOR IMPROVEMENT OF MEDICAL CARE SERVICE IN THE REPUBLIC OF MOLDOVA	TITLE: Emergency Center 3F X-ray Room ELEVATION Number of Drawing: E-05 Scale A3: 1: 100

注：MRIエリアの扉は、アルミ框戸を使っていた

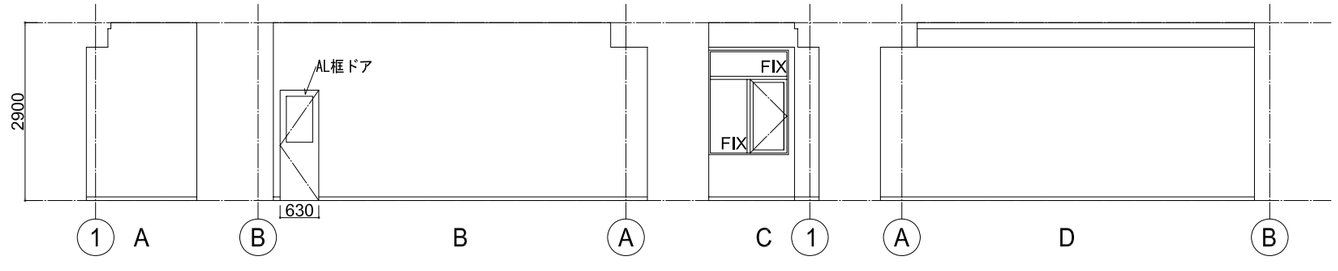
office 1

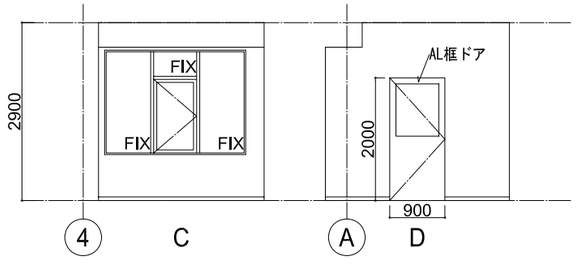


operators room

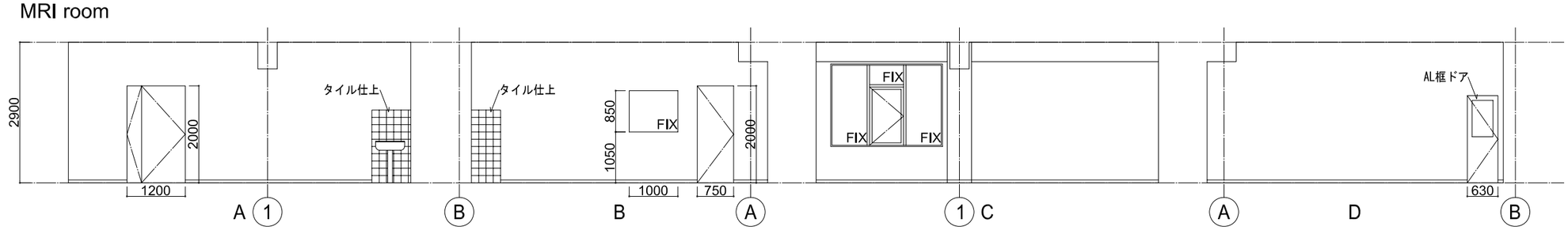


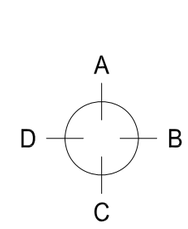
office 2



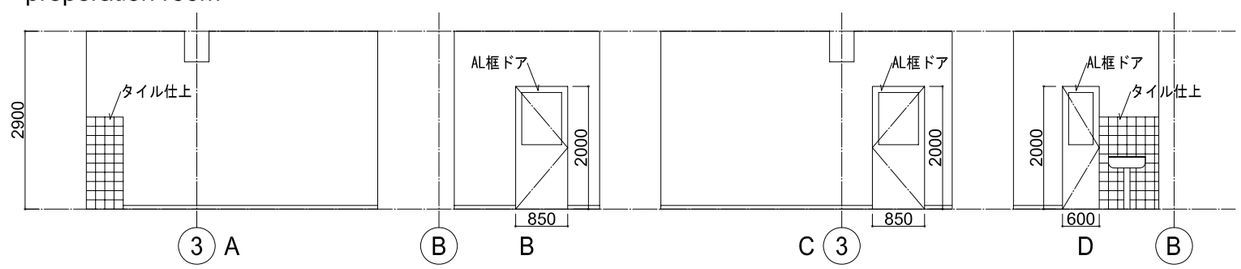


MRI room

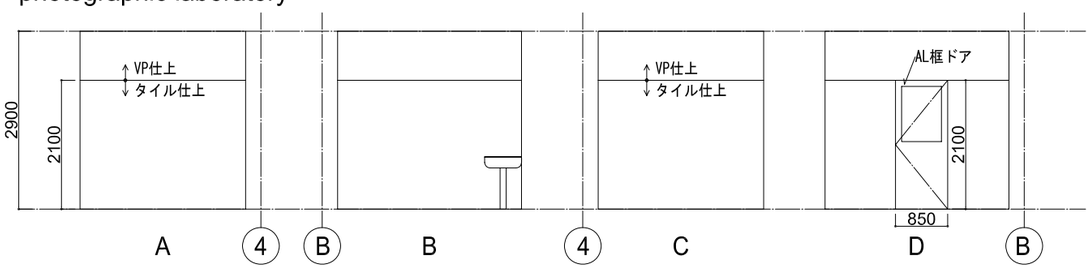




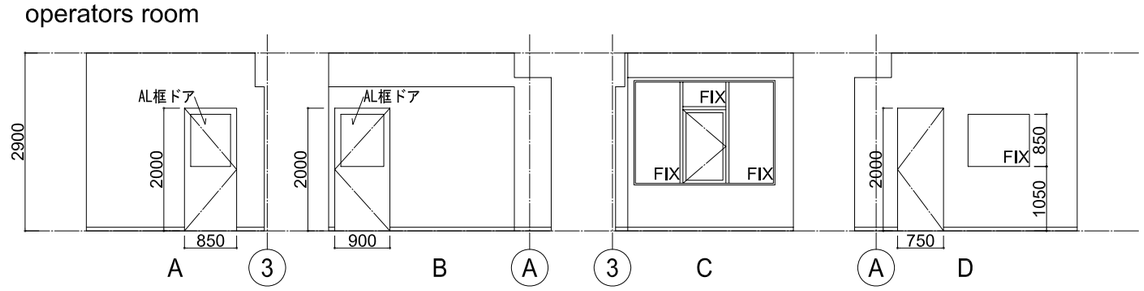
preperation room



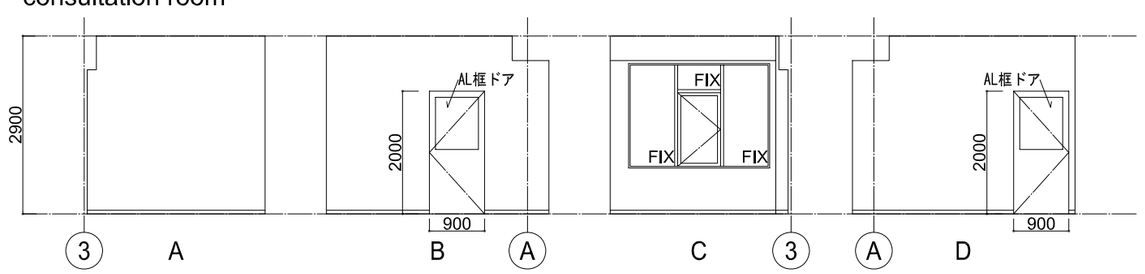
photographic laboratory



operators room



consultation room

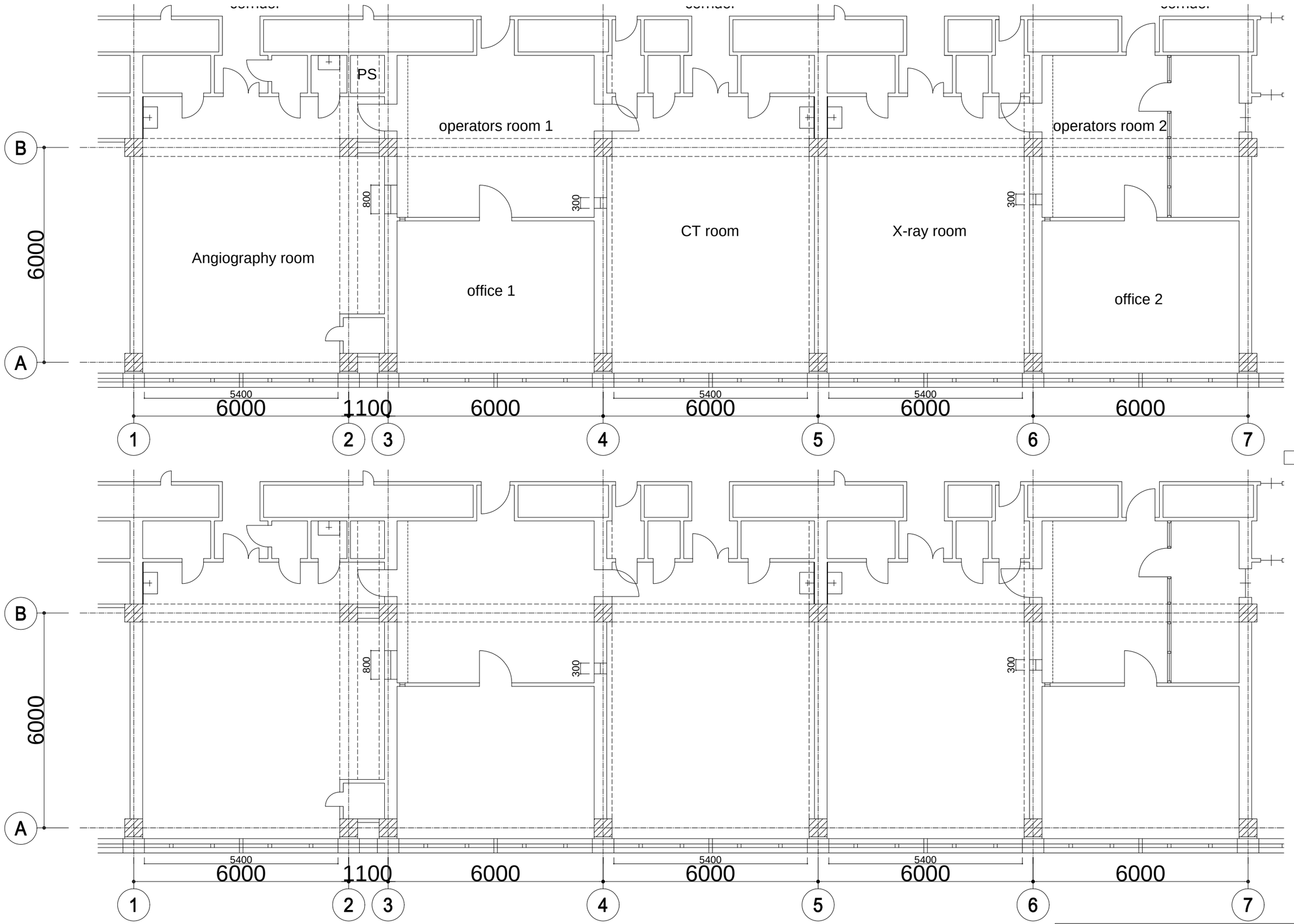


2013.01.30

Fujita Planning Co.,Ltd.	YOKOGAWA ARCHITECTS & ENGINEERS,INC.	THE PROJECT FOR IMPROVEMENT OF MEDICAL CARE SERVICE IN THE REPUBLIC OF MOLDOVA	TITLE: Emergency Center 2F MRI Room ELEVATION	Number of Drawing: E-06 / Scale: A3 1: 100

National Scientific-Practical Center for Emergency Medicine

Appendix4-3 (6/6)



current plan

Sfanta Treime Hospital 2F Angiography, CT, X-ray PLAN

2013.01.30

Fujita Planning Co.,Ltd.

YOKOGAWA ARCHITECTS & ENGINEERS,INC.

THE PROJECT FOR IMPROVEMENT OF MEDICAL CARE SERVICE
IN THE REPUBLIC OF MOLDOVA

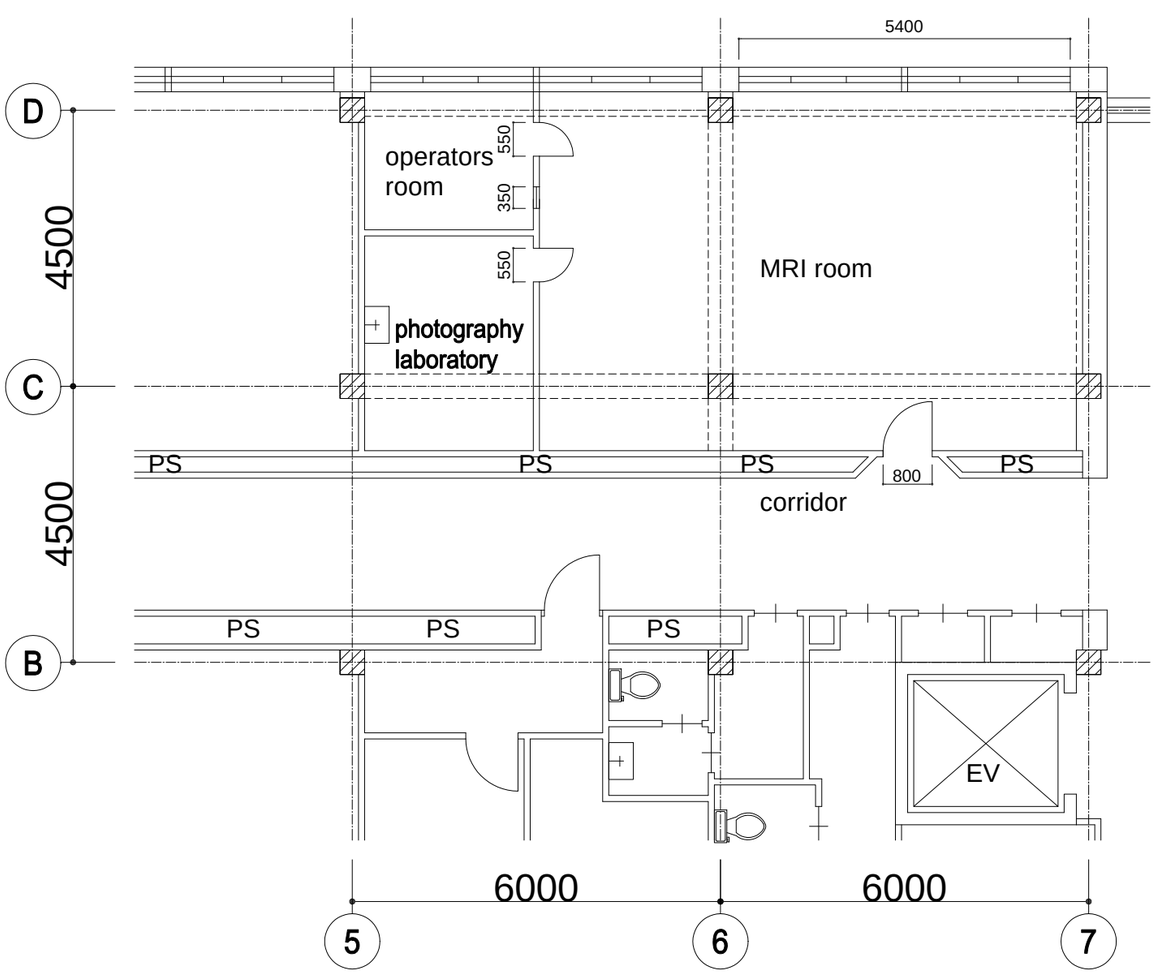
TITLE
Sfanta Treime Hospital
2F Angiography, CT, X-ray PLAN

Number of Drawing
S-01

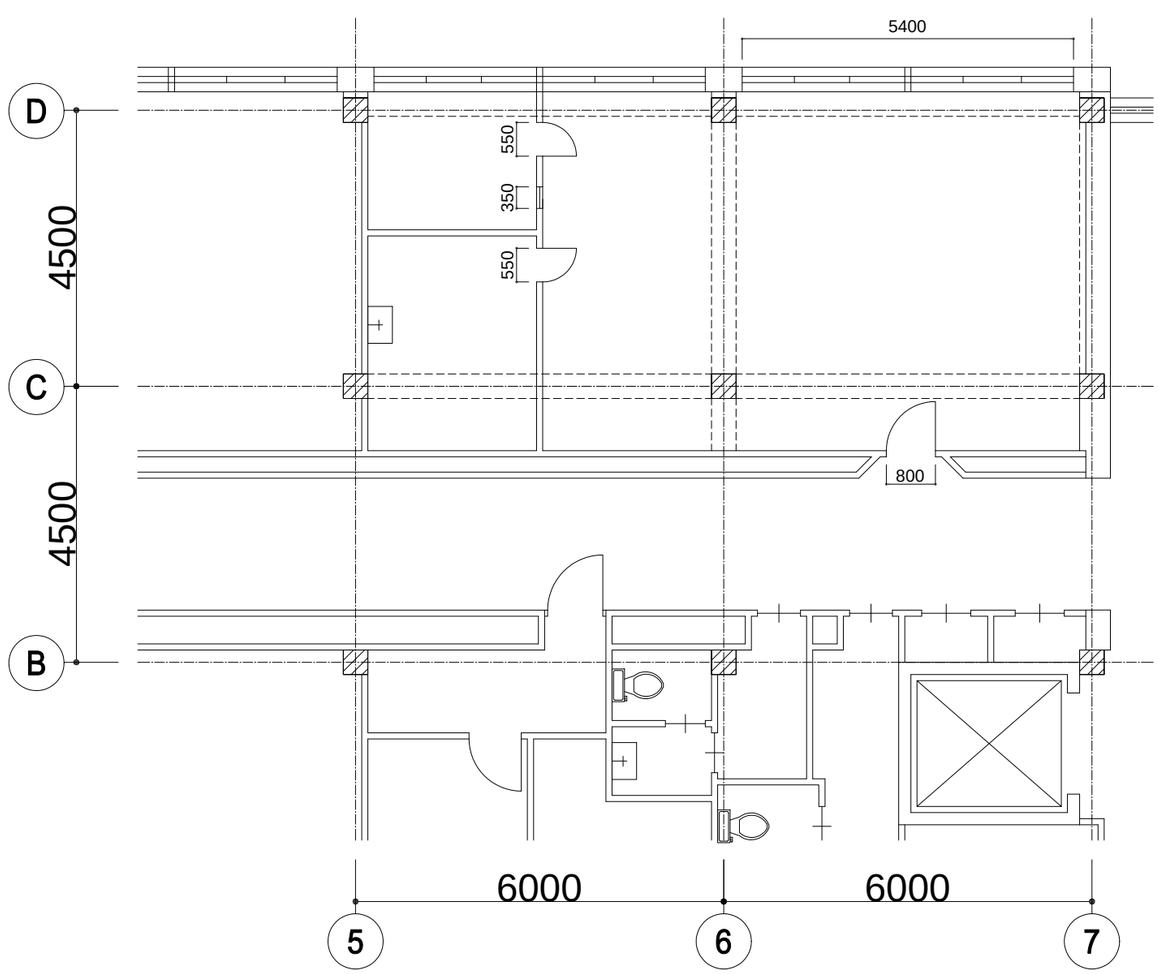
Scale
A3 1: 100

Municipal Clinical Hospital "Sf. Treime"

Appendix4-4
(1/5)



current plan



Sfanta Treime Hospital 1F MRI Room PLAN

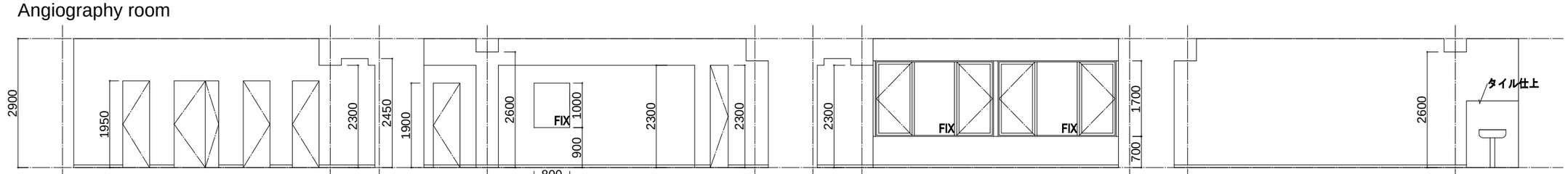
Municipal Clinical Hospital "Sf. Treime"

Appendix4-4 (2/5)

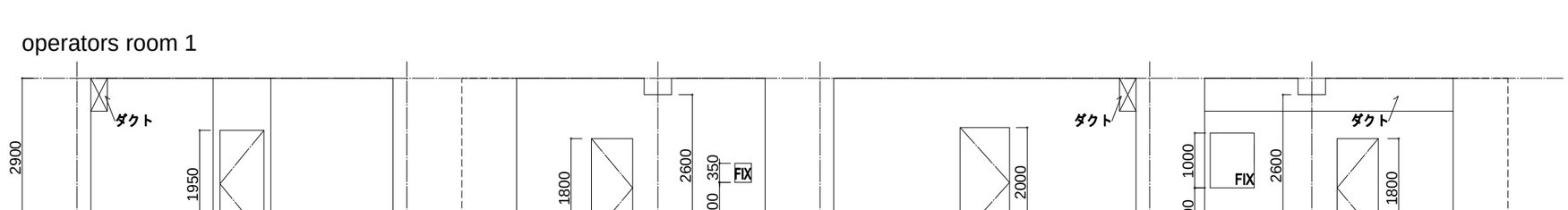
2013.01.30

Fujita Planning Co.,Ltd.	YOKOGAWA ARCHITECTS & ENGINEERS,INC.	THE PROJECT FOR IMPROVEMENT OF MEDICAL CARE SERVICE IN THE REPUBLIC OF MOLDOVA	TITLE: Sfanta Treime Hospital 1F MRI Room PLAN	Number of Drawing: S-02 / Scale: A3 1: 100

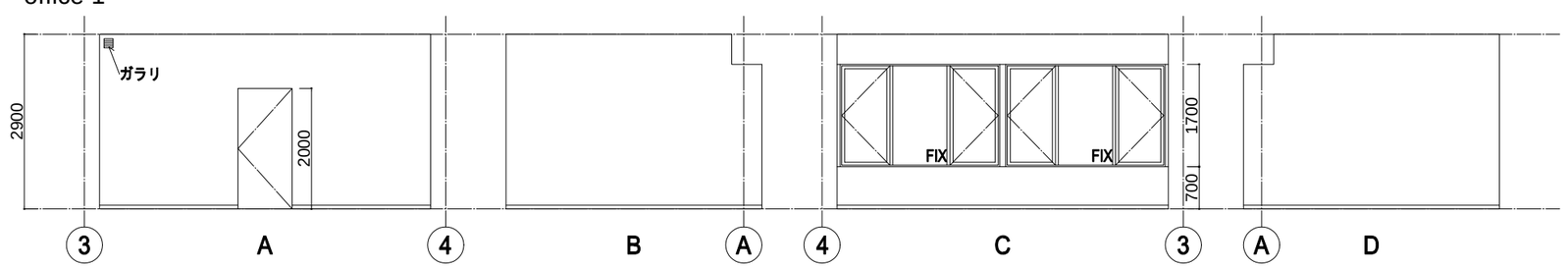
Angiography room



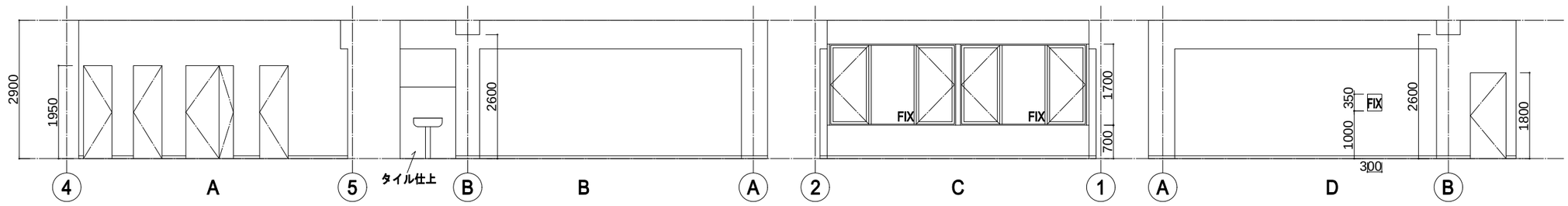
operators room 1

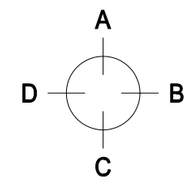


office 1



CT room





Municipal Clinical Hospital "Sf. Treime"

Appendix4-4 (3/5)

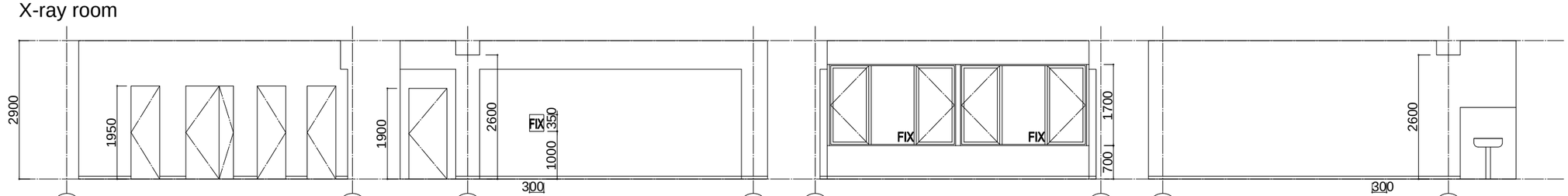
2013.01.30

Fujita Planning Co.,Ltd.	YOKOGAWA ARCHITECTS & ENGINEERS,INC.	THE PROJECT FOR IMPROVEMENT OF MEDICAL CARE SERVICE IN THE REPUBLIC OF MOLDOVA	TITLE: Sfanta Treime Hospital 2F Angiography, CT, X-ray ELEVATION 1

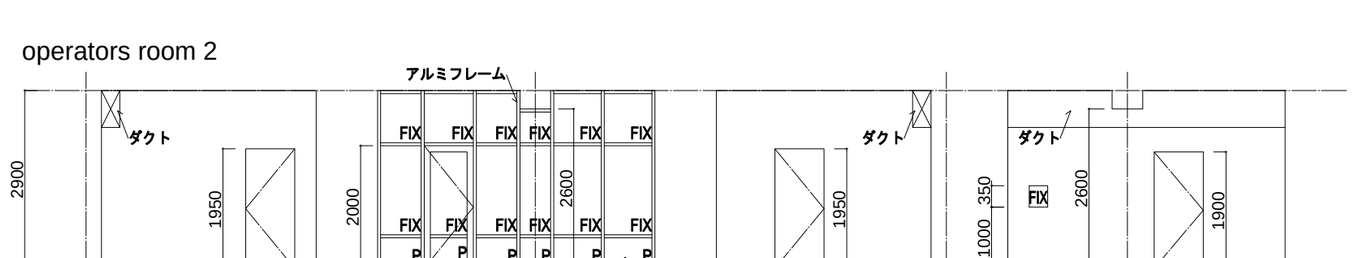
Number of Drawing: S-03-1

Scale: A3 1: 100

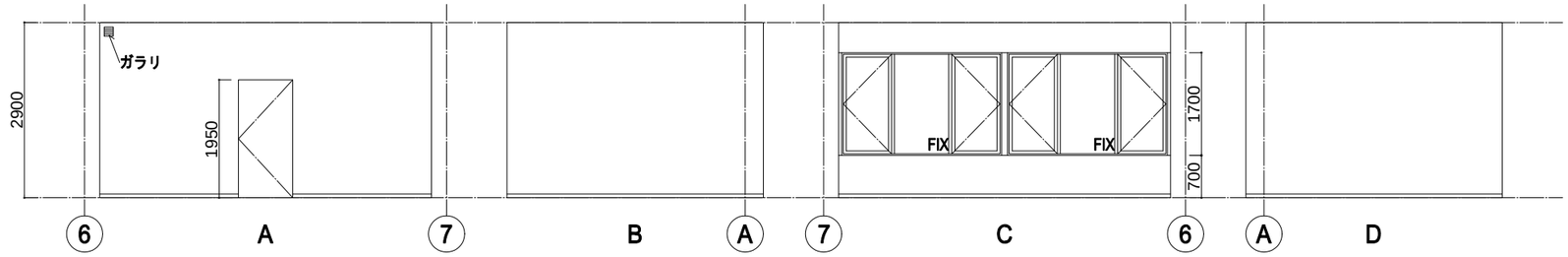
X-ray room

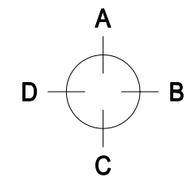


operators room 2



office 2





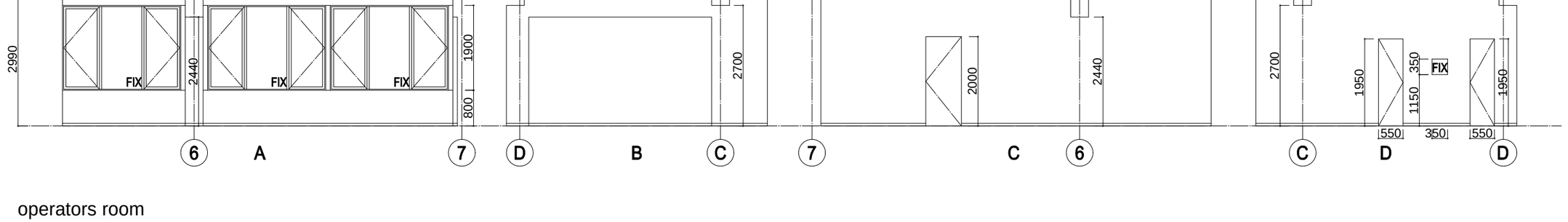
Municipal Clinical Hospital "Sf. Treime"

Appendix4-4
(4/5)

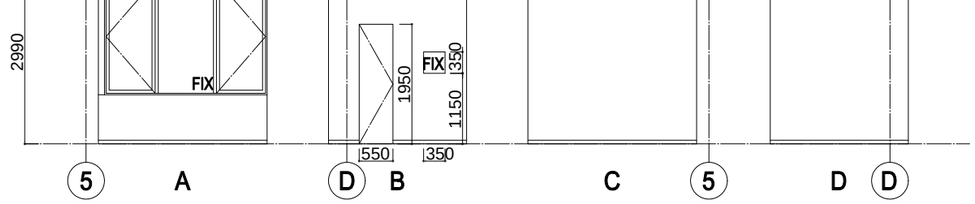
2013.01.30

Fujita Planning Co.,Ltd.	YOKOGAWA ARCHITECTS & ENGINEERS,INC.	THE PROJECT FOR IMPROVEMENT OF MEDICAL CARE SERVICE IN THE REPUBLIC OF MOLDOVA	TITLE: Sfanta Treime Hospital 2F Angiography, CT, X-ray ELEVATION 2	Number of Drawing: S-03-2 / Scale: A3 1: 100

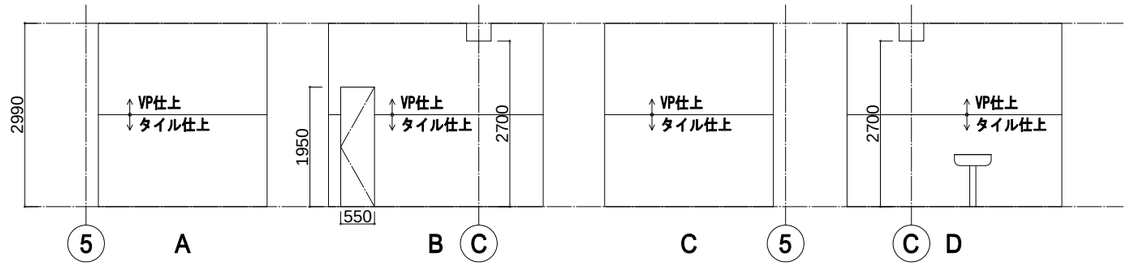
MRI room

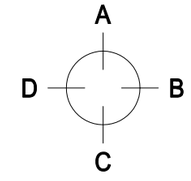


operators room



photography laboratory





2013.01.30

Fujita Planning Co.,Ltd.	YOKOGAWA ARCHITECTS & ENGINEERS,INC.	THE PROJECT FOR IMPROVEMENT OF MEDICAL CARE SERVICE IN THE REPUBLIC OF MOLDOVA	TITLE: Sfanta Treime Hospital 1F MRI Room ELEVATION / Number of Drawing: S-04 / Scale: A3 1: 100

Municipal Clinical Hospital "Sf. Treime"

Appendix4-4 (5/5)

Equipment List/ Republican Clinical Hospital

Item No.	New equipment	Qty
E-01	Anesthesia machine	14
E-02	Angiography	1
E-03	Artificial heart-lung machine	2
E-04	Autoclave, vertical	6
E-05	Autotransfusion system	7
E-06	Bilirubin analyzer	1
E-07	Blood bank refrigerator	12
E-08	Blood gas analyzer	1
E-09	Blood warmer	11
E-10	Body warmer	3
E-11	C-arm unit	1
E-12	C-arm, mobile	2
E-13	Centrifuge	1
E-14	CO2 incubator	1
E-15	Coagulation analyzer	1
E-16	Computer desk, mobile	20
E-17	Computer set	84
E-18	Cryosurgical unit	2
E-19	Defibrilator	8
E-20	Defibrilator with emergency cart	18
E-21	Washing basin	20
E-22	ECG	17
E-23	Ultrasonic diagnostic apparatus, obstetric A	2
E-24	EEG	3
E-25	Electrical Safety Analyser	1
E-26	Electrosurgical unit	10
E-27	Examination light	4
E-28	Glucose analyzer	3
E-29	Hematology analyzer	1
E-30	Hyper/Hypothermia System	8
E-31	Ice maker	1
E-32	ICU bed	35
E-33	Infusion pump, volumetric	70
E-34	Infusion stand	45
E-35	Kick bucket	11
E-36	Laboratory refrigerator	2
E-37	Mayo table	11
E-38	Microscope A	2
E-39	Microscope B	2
E-40	Multimeter	2

Equipment List/ Republican Clinical Hospital

Item No.	New equipment	Qty
E-41	Operation light	11
E-42	Operation microscope A	2
E-43	Operation table A	9
E-44	Operation table B	1
E-45	Operation table C	1
E-46	Osmometer	1
E-47	Oxygen inhalation set	36
E-48	Patient monitor A	29
E-49	Patient monitor B	30
E-50	Patient trolley	24
E-51	Pulse oximeter	25
E-52	Refrigerator A	25
E-53	Refrigerator B	10
E-54	Refrigerator C	1
E-55	Shelves for sterilised box	1
E-56	Simulator, multiparameter (ECG, Defibrillator)	1
E-57	Slave monitor	13
E-58	Stool A	33
E-59	Storage unit C	1
E-60	Suction unit	60
E-61	Syringe pump	66
E-62	Tool Box	3
E-63	Trolley B	14
E-64	Trolley C	1
E-65	Ultrasonic coagulation device	1
E-66	Ventilator A	49
E-67	Ventilator B	3
E-68	Water distiller	1
E-69	X-ray film viewer	6
F-01	Cabinet A	15
F-02	Cabinet B	96
F-03	Chair	6
F-04	Cleaning equipment	2
F-05	Collection Bin	6
F-06	Counter	1
F-07	Cupboard A	7
F-08	Cupboard B	6
F-09	Cupboard C	6
F-10	Cupboard D	1
F-11	Desk A	25

Equipment List/ Republican Clinical Hospital

Item No.	New equipment	Qty
F-12	Dispensing counter	2
F-13	Disposal unit	4
F-14	Foot stool	20
F-15	HOLDER, sack, large	23
F-16	HOLDER, sack, medium	27
F-17	Laboratory table A	4
F-18	Laboratory table B	5
F-19	Laboratory table C	1
F-20	Locker A	161
F-21	Medicine cabinet	25
F-22	Microwave oven	5
F-23	Nurse base	9
F-24	Screen	2
F-25	Shelf A	13
F-26	Shelf B	67
F-27	Shelf C	1
F-28	Shelf D	11
F-29	Shelf E	3
F-30	Sink A	8
F-31	Soap dispenser	20
F-32	Sofa bed	5
F-33	Stainless steel table A	5
F-34	Stool B	6
F-35	Storage unit A	1
F-36	Storage unit B	1
F-37	Table A	4
F-38	Table B with 5 chairs	6
F-39	Table C	18
F-40	Table D	7
F-41	Table E	7
F-42	Table F	3
F-43	Table G	7
F-44	Table, stainess steel	1
F-45	Trolley A	86
F-46	Warming cabinet	11
F-47	Washing basin with stand	11
F-48	Waste collecting cart	3
F-49	Water boiler, wall mounted	6
F-50	White board	29
I-01	Bed head unit A	20

Equipment List/ Republican Clinical Hospital

Item No.	New equipment	Qty
I-02	Bed head unit B	20
I-03	Bed head unit C	35
I-04	Electrical panel	1
I-05	Gas syrinder rack	1
I-06	PANEL operating theatre	11
I-07	Pendant A	11
I-08	Pendant B	11
I-09	Socket	1
I-10	Sterilization lamp	125
I-11	Table Exhaust Device with laminar airflow	1
I-12	Vertical laminar flow unit	4

Equipment List/ Scientific Research Institute in the Field of Mother and Child Health Protection

Item No.	Dept.	New Equipment	Q'ty
MC-01	Imaging and X-ray	CT	1
MC-02	Imaging and X-ray	MRI, 1.5T	1
MC-03	Imaging and X-ray	General X-ray, Fluoroscopy with general unit	1
MC-04	Imaging and X-ray (Policlinic)	General X-ray	1
MC-05	Imaging and X-ray	General X-ray, urology	1
MC-06	Imaging and X-ray	Mobile X-ray	1
MC-07	Obstetric	Ultrasonic diagnostic apparatus, obstetric A	4
MC-08	Pediatric	Ultrasonic diagnostic apparatus, pediatric	3
MC-09	Neonate	Ultrasonic diagnostic apparatus, neonate	1
MC-10	Endoscopy	Video gastroscope A	2
MC-11	Endoscopy	Video gastroscope B	2
MC-12	Endoscopy	Video gastroscope C	2
MC-13	Endoscopy	Video endoscope system	1
MC-14	Endoscopy	Video bronchoscope	1
MC-15	Endoscopy	Video endoscope system	1
MC-16	Endoscopy	Bronchoscope, pediatric, rigid	1
MC-17	Endoscopy	Cystoscope, pediatric, rigid	1
MC-18	Endoscopy	Endoscope washer disinfector	3
MC-19	Endoscopy	Endoscope mobile trolley	3
MC-20	Operation, Obstetric	Laparoscope set with video system	2
MC-21	Operation, Pediatric	Neuroeedoscope set with video system	1
MC-22	Operation, Obstetric	Anesthesia apparatus	8
MC-23	Operation, Pediatric	Anesthesia apparatus	6
MC-24	ICU, Neonate	Ventilator, HFO	2
MC-25	ICU, Neonate	CPAP	2
MC-26	ICU,Obstetric	Patient monitor	10
MC-27	ICU,Obstetric	Patient monitor	25
MC-28	ICU, Neonate	Patient monitor	15
MC-29	Delivery room	Cardiotocograph	10
MC-30	Laboratory	Hematology analyzer	1
MC-31	Laboratory	Binocular microscope	1
MC-32	Laboratory	Immunology analyzer	1
MC-33	Laboratory	Biochemical analyzer	1
MC-34	Laboratory	Coagulometer	1
MC-35	Laboratory	Urinealizer	1
MC-36	Functional diagnostics	EEG	2
MC-37	Functional diagnostics	EMG	1
MC-38	Functional diagnostics	Polysomnograph	1
MC-39	Ambulance	Ambulance, type C, neonate	1
MC-40	Ambulance	Ambulance, type C, pediatric	1

Equipment List/ Scientific Research Institute in the Field of Mother and Child Health Protection

Item No.	Dept.	New Equipment	Q'ty
MC-41	Neonate / Obstetric	Mobile aseptyser	4
MC-42	Genetic investigation	Aminoacid analyzer	1
MC-43	Genetic investigation	Fluorescent microscope with TV	1
MC-44	Genetic investigation	Hot plate	1
MC-45	Genetic investigation	Incubator	1
MC-46	Genetic investigation	Water bath	1
MC-47	Genetic investigation	Real time polymerase chain reaction (QF-PCR) apparatus	1
MC-48	Genetic investigation	Ultrasonic diagnostic apparatus, obstetric B	1
MC-49	Genetic investigation	Microscope with Video for cytogenetical investigation	3
MC-50	Genetic investigation	Persipiration analyser (mucoviscidosis diagnosis)	1
MC-101	Operation room	Defibrillator for pediatric	5
MC-102	ICU No. 1	Defibrillator for pediatric	1
MC-103	ICU No. 2	Defibrillator for pediatric	1
MC-104	Operation room	Syringe pump	5
MC-105	ICU No. 1	Syringe pump	5
MC-106	ICU No. 2	Syringe pump	5
MC-107	Operation room	Anesthesia apparatus	5
MC-108	Operation room	Electrodermatome	1
MC-109	Operation room	Skin grafts perforator	1
MC-110	ICU No. 1	Central monitoring system	1
MC-111	ICU No. 1	Patient monitor	5
MC-112	ICU No. 2	Patient monitor	5
MC-113	ENT	ENT examination unit with chair	1
MC-114	ENT	Electric coagulator, high frequency, bipolar	1
MC-115	ENT	Microdebrider	1
MC-116	Audiology	System for recording PRB-screening (acoustic emissions)	2
MC-117	Audiology	Impedance audiometer	2
MC-118	Audiology	Audiometer	2
MC-119	Radiology	Panorama X-ray apparatus	1
MC-120	Radiology	Dental X-ray	1

Equipment List/ Oncologic Institute

Item No.	Department	New Equipment	Q'ty
OI-01	Policlinic, imaging diagnosis	CT	1
OI-02	Policlinic, imaging diagnosis	Ultrasonic diagnostic apparatus, general A	1
OI-03	Policlinic, imaging diagnosis	Ultrasonic diagnostic apparatus for biopsy and elastography	1
OI-04	Policlinic, imaging diagnosis	Digital mammography with laser imager	2
OI-05	Policlinic, endoscopy	Video laryngoscope	1
OI-06	Policlinic, endoscopy	Video bronchoscope	2
OI-07	Policlinic, endoscopy	Video gastroscope	1
OI-08	Policlinic, endoscopy	Video colonoscope	4
OI-09	Policlinic, endoscopy	Video endoscope system	5
OI-10	Policlinic, endoscopy	Endoscope washer disinfector	5
OI-11	ICU	Ventilator	23
OI-12	ICU	Ventilator neonate	1
OI-13	ICU	Patient monitor	24
OI-14	ICU	Mobile X-ray	2
OI-15	OR	Anesthesia machine	19
OI-16	OR	Anestheia machine, Pediatric	1
OI-17	OR	Patient monitor	20
OI-18	OR	Video gastroscope	2
OI-19	OR	Video colonoscope	2
OI-20	OR	Video bronchoscope	2
OI-21	OR	Vidoendoscope system	1
OI-22	OR	Electrosurgical unit for endoscopy	1
OI-23	OR	Endoscope washer disinfector	1
OI-24	OR	Laparoscope set	1
OI-25	OR	Laryngoscope set	1
OI-26	OR	C-arm, mobile	1

Equipment List/ Scientific-Practical Center for Emergency Medicine

Item No.	Department	New Equipment	Q'ty
EH-01	Imaging diagnosis	Angiography	1
EH-02	Imaging diagnosis	CT	1
EH-03	Imaging diagnosis	MRI 1.5T	1
EH-04	Imaging diagnosis	X-ray, Fluoroscopy with general	1
EH-05	Imaging diagnosis	Mobile X-ray	4
EH-06	OR	Operation table, general	9
EH-07	OR	Operation table, orthopedic	5
EH-08	OR	Operation table, neurosurgery	2
EH-09	ICU	Ventilator	22
EH-10	Endoscopy dept.	Video gastroscope, Therapic	2
EH-11	Endoscopy dept.	Video gastroscope, Diagnostic	2
EH-12	Endoscopy dept.	Video duodenoscope, ERCP	1
EH-13	Endoscopy dept.	Video colonoscope	1
EH-14	Endoscopy dept.	Vido endoscope system	4
EH-15	Endoscopy dept.	Endoscope washer disinfector	1
EH-16	Endoscopy dept.	Laparoscope set	1
EH-17	Endoscopy dept.	Artroscope	1

Equipment List/ Chisinau Municipal Clinical Hospital "Sfanta Treime"

Item No.	Dept.	New Equipment	Q'ty
ST-01	Imaging Diagnosis	Angiography, biplane	1
ST-02	Imaging Diagnosis	CT	1
ST-03	Imaging Diagnosis	MRI 1.5T	1
ST-04	Imaging Diagnosis	X-ray, Fluoroscopy with general	1
ST-05	Imaging Diagnosis	Ultrasonic diagnostic apparatus, general B	1
ST-06	Functional diagnosis	Ultrasonic diagnostic apparatus, Cardiac	1
ST-07	ICU	Ventilator	16
ST-08	ICU	Blood gas analyzer	1
ST-09	OR	Anesthesia machine	10
ST-10	OR	Laparoscope set, abdomen	2
ST-11	OR	Laparoscope set, gynecology	1
ST-12	OR	Laparoscope set, trachesurgery	1
ST-13	OR	Uretheroscope set	1
ST-14	OR	Nephroscope set	1
ST-15	OR	Lithotriptomy set, pneumatic	1
ST-16	OR	TUR set	1
ST-17	OR	TV set for urology endoscopy	1
ST-18	OR	C-arm	1
ST-19	OR	Operation table	1
ST-20	OR	ESWL	1
ST-21	Endoscope	Video esophagas scope with TV system	1
ST-22	Ophthalmology	Slit lamp, OCT	1

Equipment List/ National Center for Public Health

Item No.	Dept.	New Equipment	Q'ty	
			Central	Regional
IP-1	Bacteology Lab.	ELISA System	3	0
IP-2	Bacteology Lab.	Automated DNA sequencer	1	0
IP-3	Bacteology Lab.	Real Time PCR set	0	3
IP-4	Bacteology Lab.	Ice maker	1	1
IP-5	Bacteology Lab.	Biological safety cabinets, Class II	3	0
IP-6	Bacteology Lab.	Autoclave, vertical	5	0
IP-7	Bacteology Lab.	Drying oven	4	0
IP-8	Bacteology Lab.	Automated Culture Media Preparator	1	0
IP-9	Bacteology Lab.	Automatic colony counter	1	0
IP-10	Bacteology Lab.	Colony counter with reader	0	10
IP-11	Bacteology Lab.	Binocular microscope, dark field, phasse contrast, and fluorescent with TV monitor	2	0
IP-12	Bacteology Lab.	Stereo microscope with TV monitor	1	0
IP-13	Bacteology Lab.	Incubator, cooling	4	0
IP-14	Bacteology Lab.	Thermoblock, PCR sample	1	3
IP-15	Bacteology Lab.	Micro centrifuge, 1.5ml tube	0	6
IP-16	Bacteology Lab.	Centrifuge, cooling	0	6
IP-17	Bacteology Lab.	Fluid pump, suction	1	3
IP-18	Bacteology Lab.	Incubator, natural convection	8	0
IP-19	Bacteology Lab.	CO2 Incubator	2	0
IP-20	Bacteology Lab.	Laboratory Freezer	2	10
IP-21	Bacteology Lab.	Laboratory Freezer, ultra low	1	3
IP-22	Bacteology Lab.	Electrical balance A	1	0
IP-23	Bacteology Lab.	Blender	1	0
IP-24	Bacteology Lab.	Air Sampler for airborne bacteria	1	0
IP-25	Sanitary Higinenic (Chemical) Lab.	Ultrasonic Bath	1	0
IP-26	Bacteology Lab.	Vortex	6	23
IP-27	Bacteology Lab.	Timer	17	56
IP-28	Bacteology Lab.	Thermometer, digital	30	100
IP-29	Bacteology Lab.	Thermostatic bath	1	10
IP-30	Bacteology Lab.	Liquid filterling set with vacuum pump, 3 slots	1	0
IP-31	Bacteology Lab.	Set of adjustable digital dispensers	5	11
IP-32	Bacteology Lab.	Set of Multi-Channel Micropipette	2	15
IP-33	Sanitary Higinenic (Chemical) Lab.	Gas Chromatograph, ECD/NPD detector	1	2
IP-34	Sanitary Higinenic (Chemical) Lab.	Gas Chromatograph, FID mass-selective detectors	0	1

Equipment List/ National Center for Public Health

Item No.	Dept.	New Equipment	Q'ty	
			Central	Regional
IP-35	Sanitary Higinenic (Chemical) Lab.	Liquid Chromatograph, 3 detectors	1	1
IP-36	Sanitary Higinenic (Chemical) Lab.	Gas Chromatograph, FID detector, automatic headspase sampler	0	1
IP-37	Sanitary Higinenic (Chemical) Lab.	Gas Chromatograph, FID detector, thermal desorbe	0	1
IP-38	Sanitary Higinenic (Chemical) Lab.	Ultra water purifier	0	1
IP-39	Sanitary Higinenic (Chemical) Lab.	Microwave mineralizer	0	1
IP-40	Sanitary Higinenic (Chemical) Lab.	Atomic absorption spectrophotometer	1	2
IP-41	Sanitary Higinenic (Chemical) Lab.	Solid phase extraction	1	0
IP-42	Sanitary Higinenic (Chemical) Lab.	Rotary evapolator with vacuum pump	1	0
IP-43	Sanitary Higinenic (Chemical) Lab.	Environmental monitor, portable	1	3
IP-44	Sanitary Higinenic (Chemical) Lab.	Aerosol monitor	1	3
IP-45	Sanitary Higinenic (Chemical) Lab.	Fluorometer	1	0
IP-46	Sanitary Higinenic (Chemical) Lab.	Capillary electrophoresis apparatus	1	0
IP-47	Sanitary Higinenic (Chemical) Lab.	Shaker, reciprocating	2	0
IP-48	Sanitary Higinenic (Chemical) Lab.	Homogenizer	3	0
IP-49	Sanitary Higinenic (Chemical) Lab.	TLC densitometer	2	0
IP-50	Sanitary Higinenic (Chemical) Lab.	Conductometer	2	5
IP-51	Sanitary Higinenic (Chemical) Lab.	Digital Muffle furnace	1	0
IP-52	Sanitary Higinenic (Chemical) Lab.	Distilator	2	0
IP-53	Sanitary Higinenic (Chemical) Lab.	Bidistillator	1	0
IP-54	Sanitary Higinenic (Chemical) Lab.	Spectrophotometer UV-VIS	4	0

Equipment List/ National Center for Public Health

Item No.	Dept.	New Equipment	Q'ty	
			Central	Regional
IP-55	Sanitary Higinenic (Chemical) Lab.	Photoelectric colorimeter	4	0
IP-56	Sanitary Higinenic (Chemical) Lab.	Incubator	1	0
IP-57	Sanitary Higinenic (Chemical) Lab.	Automatic titrator with recorder	1	6
IP-58	Sanitary Higinenic (Chemical) Lab.	Air sampling pump for thermodesorber GC (Determine organic compounds in the air)	1	1
IP-59	Sanitary Higinenic (Chemical) Lab.	Laboratory washing, drying and disinfecting machine	4	0
IP-60	Sanitary Higinenic (Chemical) Lab.	pH-meter	1	5
IP-61	Sanitary Higinenic (Chemical) Lab.	Mercury Analyzer	1	3
IP-62	Sanitary Higinenic (Chemical) Lab.	Laboratory Fume Hoods with external exhaust system	10	0
IP-63	Sanitary Higinenic (Chemical) Lab.	Air sampling pump with 4 outlets (Detects toxic chemicals)	3	10
IP-64	Control Physical Factors Lab.	Selective Radiation Meter	1	0
IP-65	Control Physical Factors Lab.	UV radiation meter	1	0
IP-66	Control Physical Factors Lab.	Sound level meter	1	0
IP-67	Control Physical Factors Lab.	Ultrasound microphone	1	0
IP-68	Control Physical Factors Lab.	Sound calibrator	1	3
IP-69	Control Physical Factors Lab.	Vibration meter	2	3
IP-70	Control Physical Factors Lab.	Amenity meter	2	3
IP-71	Control Physical Factors Lab.	Light Meter	1	3
IP-72	Control Physical Factors Lab.	Dust meter	2	3
IP-73	Center of Radioprotection	Alpha and beta counting spectrometry system	1	1
IP-74	Center of Radioprotection	Gamma counting spectrometry system	0	3

Equipment List/ National Center for Public Health

Item No.	Dept.	New Equipment	Q'ty	
			Central	Regional
IP-75	Center of Radioprotection	X-Ray impulse dosemeter	1	3
IP-76	Center of Radioprotection	Survey meter A	1	3
IP-77	Center of Radioprotection	Survey meter B	1	3

Short specification for major items (Republican Clinical Hospital)

Item No.	Equipment	Simple specifications	Q'ty
E-01	Anesthesia machine	1) Composition : Main unit, Ventilator, Vaporizer, Anesthesia monitor 2) Applicable patient : Adult 3) Gas: Oxygen, N2O, Air 4) Vaporizer : Halothane, Sevofroren	18
E-02	Angiography	1) Composition : C-arm, X-ray generator, Image processor, DSA unit, Catheter table, Catheter laboratory, TV monitor, Injector 2) Type : Ceiling fixing, single plane 3) Application : Neurosurgery 4) X-ray generator : 150kW 5) X-ray tube : 1.5MHU 6) DSA unit : 30 fps or more 7) Flap panel : 12 inch or more	1
E-03	Artificial hear-lung machine	1) Composition : Pump console, Monitor unit, Oxygen blender 2) Pump console Roller pump : 5 pcs. or more Centrifuge pump : 1 pc. or more 3) Monitor unit Parameters : Pressure 8, time 4, temperature 18 or more 4) Safety mechanism Ultrasonic air sensor system : Equipped Level sensor system : Equipped	2
E-05	Autotransfusion system	1) System : Fully automated (collect, wash and reinfusion) 2) One cycle (fill, wash and empty)time : 4 min. or less 3) Safety sensors : 3 or more 4) Centrifuge speed : 0 - 4,500 rpm or more 5) Pump capacity : 0 - 500ml/min or more	12
E-08	Blood gas analyzer	1) Measurment itme : pH, pCO2, PO2, K+, Na+, Ca+,Cl-, Hct 2) Measuring time ; 120s or less 3) Sample volume : 80μL or less	2
E-11	C-arm unit	1) Composition : C-arm, X-ray generator, Table, Image monitor 2) Type : Ceiling fixing type 3) Application : Orthopedic 4) X-ray generator : 150kW 5) X-ray tube : 1.5 MHU 6) DSA unit : 30 fps or more 7) Flat panel : 12 inch or more	1
E-12	C-arm, mobile	1) Composition : Main unit , Display unit 2) Type : Mobile C-arm unit 3) DSA : Fluoroscopy 30fps or more 4) X-ray generator : 40 - 110 kV/Max. 20 mA or more 5) X-ray tube : 100kHU or more 6) Display : 18 inch 2 set or more	2
E-15	Coagulation analyzer	1) Measurement item : PT, APTT, Fbg, TTO, HpT, AST-III, PLG, FDP, D Dimer or more 2) Measuring speed : Max. 110 test/hr or more, 5 item simultaneous measurement 60 test/hr or more 3) Measuring time : PT, Fbg 110s or less, Others 200 s or less	1

Short specification for major items (Republican Clinical Hospital)

Item No.	Equipment	Simple specifications	Q'ty
E-18	Cryosurgical unit	1) Composition : Main unit, Headpiece, Gas cylinder, Gas regulator 2) Application : Skin, Ophthalmology and others 3) Gas : LCO2	6
E-19	Defibrillator	1) Application : Adult and Pediatric 2) Display : 7 inch or more 3) Max output : 360J or more 4) Measurement item : ECG 5) Recorder : Equipped 6) Safety standard : CF	13
E-20	Defibrillator with emergency cart	1) Application : Adult and Pediatric 2) Display : 7 inch or more 3) Max output : 360J or more 4) Measurement item : ECG 5) Recorder : Equipped 6) Safety standard : CF 7) Emergency cart : Equipped	21
E-23	Ultrasonic diagnostic apparatus, obstetric A	1) Composition : Main unit, Probe, B/W printer 2) Monitor : Color LCD 17 inch or more 3) Function : B, M, Color doppler, 4D 4) Probes : Sector, Linear Convex, Convex 4D, Transvaginal	2
E-24	EEG	1) Composition : Main unit, Electrode connection box, Light stimulator, Sound stimulator with headphone, Electrode, Rack with trolley, Analyze program 2) Application : EEG for adult and pediatric 3) Channel : 200 channels or more	5
E-26	Electrosurgical unit	1) Application : General surgery 2) Max. output : 300W or more 3) Mode : Cut, Coagulation, Mix 4) Mobile tray : Equipped	15
E-29	Hematology analyzer	1) Measurement item : WBC, RCB, PLT, HGB WBC diff 8 or more 2) Principal : Flowcytometory and hemolyzing method 3) Measuring speed : 100 samples/hr or more 4) Auto sampler : Equipped	3
E-41	Operation light	1) Type : Ceiling hanging type 2) Light source : LED 3) Number of light head : 2 sets 4) Light intensity : 15000lux or more 5) CCD camera : Equipped	16
E-42	Operation microscope A	1) Application : Neurosurgery and ENT 2) Control : Electric control 3) Objective part : for 2 operators 4) Focus : Manual, variable 5) Magnification : 1.9 - 15 x or more	2

Short specification for major items (Republican Clinical Hospital)

Item No.	Equipment	Simple specifications	Q'ty
E-43	Operation table A	1) Application : General surgery 2) Type : Electrical control 3) Section : 4 or more 4) Table top : 1,950 x 500 mm or more 5) Back section : Up 90° Down 40° or more 6) Head section : Up 60° Down 90° or more	14
E-44	Operation table B	1) Application : Orthopedic surgery 2) Type : Electrical control 3) Section : 4 or more 4) Table top : 1,950 x 500 mm or more 5) Back section : Up 90° Down 40° or more 6) Head section : Up 60° Down 90° or more 7) Leg extraction table : Equipped	1
E-45	Operation table C	1) Application :Neurosurgery 2) Type : Electrical control 3) Section : 4 or more 4) Table top : 1,950 x 500 mm or more 5) Back section : Up 90° Down 40° or more 6) Head section : Up 60° Down 90° or more 7) Head fixing unit : Equipped	1
E-48	Patient monitor A	1) Measurement item : :ECG, Ventilation, SpO2, NIBP, Body temp. 2) Application : Adult 3) Display : Color LCD 12 inch or more 4) Trolley with caster : Equipped	50
E-49	Patient monitor B	1) Measurement item : :ECG, Ventilation, SpO2, NIBP, Body temp., CO 2) Application : Adult 3) Display : Color LCD 12 inch or more 4) Trolley with caster : Equipped	41
E-74	Ultrasonic coagulation device	1) Composition : Ultrasonic generator, Suction pump, Coagulation device for general surgery 2) Ultrasonic generator Ultrasonic output frequency : 23.5kHz/47kHz 3) Suction pump Vacuum pressure : 85kPa or more Flow rate : 20 l/min. or more 4) Coagulation device for general surgery Application : for general surgery	6
E-66	Ventilator A	1) Ventilation mode : CMV、SIMV、CPAP、PS or more 2) Applicable patient : Adult and pediatric or more 3) Accessories : Humidifier, Reusable patient circuit (3 sets or more) or more 4) Air compressor : Use external supply	77

Short specification for major items (Republican Clinical Hospital)

Item No.	Equipment	Simple specifications	Q'ty
E-67	Ventilator B	1) Ventilation mode : CMV、SIMV、CPAP、PS or more 2) Type : Movable 3) Applicable patient : Adult and pediatric or more 4) Accessories : Humidifier, Reusable patient circuit (3 sets or more) or more 5) Air compressor : Use external supply	5
I-12	Vertical laminar flow unit	1) Type : Ceiling fixing type 2) HEPA filter : Equipped 3) Ventilation volume: 2 rooms - 7,200m3/hr, 2 rooms - 8,500m3/hr 4) Filter area : 2 rooms - 2,800 x 2,800mm, 2 rooms - 3,200 x 3,200mm 5) Air volume : 0.25m/s	4

Short specification for major items (Scientific Research Institute in the field of Mother and Child Health)

Item No.	Dept.	Description	Simple specifications	Q'ty
MC-01	Imaging and X-ray	CT	1) Composition : Gantry, Patient couch, Console, Power distributor, Injector etc. 2) No. of detector : 64 pcs. or more 3) No. of slice : 64 slices or more 4) Scan field : 180 - 500 mm or more 5) Slice thickness : 0.5 - 8mm or more	1
MC-02	Imaging and X-ray	MRI, 1.5T	1) Conposition : Gantry, Patient table, Control console, Refrigerator,Phantom 2) Gantry Magnetic field : 1.5T or more Cooling material : Liquid nitrogen RF coil : Whole body, Head, Anterior neck, Spine, Body, Breast, QD knee/foot etc. 3) Patient table Movement : Adjustable by electrical control 4) Control console Program package : Equipped	1
MC-03	Imaging and X-ray	General X-ray, Fluoroscopy with general unit	1) Composition : X-ray generator, Fluoroscopy unit, Bucky table, Bucky stand, X-ray tube with support, Remote control unit, X-ray exposure controller 2) X-ray generator Radiology setting : 40 - 150kV/20 - 500 mA or more Fluoroscopy setting : 50 - 120kV/0.5 - 4.0 mA or more Automatic brightness control and excessive X-ray preventive control : Equipped 3) Fluoroscopy unit Type : Digital flat panel system Image input : 1024 x 1024 pixels 8 bit or more Network : DICOM 4) X-ray tube with support Capacity : 250kHU or more 5) Fluorosocopy remote control unit Monitor : 20 inch or more	1
MC-04	Imaging and X-ray (Policlinic)	General X-ray, General	1) Composition : X-ray generator, Bucky table, Bucky stand, X-ray tube with support, X-ray controller 2) X-ray generator: Radiology setting : 40 - 150kV/20 - 500 mA or more Automatic excessive X-ray preventive control : Equipped 3) X-ray tube with support X-ray tube capacity : 250kHU or more	1
MC-05	Imaging and X-ray	General X-ray, urology	1) Composition : X-ray generator, Urology unit, Remote control unit, X-ray exposure controller 2) X-ray generator Radiology setting : 40 - 150kV/20 - 500 mA or more Fluoroscopy setting : 50 - 120kV/0.5 - 4.0 mA or more Automatic brightness control and excessive X-ray preventive control : Equipped 3) Urology unit Type : II 9 inch or more 4) Fluorosocopy remote control unit Monitor : 20 inch or more	1
MC-06	Imaging and X-ray	Mobile X-ray	1) Composition : Main unit, CR plate 2) X-ray generator : Inverter type 3) kV range : 40 - 125 kV or more 4) mAs range : 0.5 - 100 mAs or more	1

Short specification for major items (Scientific Research Institute in the field of Mother and Child Health)

Item No.	Dept.	Description	Simple specifications	Q'ty
MC-07	Obstetric	Ultrasonic diagnostic apparatus, obstetric A	1) Composition : Main unit, Probe, B/W printer 2) Monitor : Color LCD 17 inch or more 3) Function : B, M, Color doppler, 4D 4) Probes : Sector, Linear Convex, Convex 4D, Transvaginal	4
MC-08	Pediatric	Ultrasonic diagnostic apparatus, pediatric	1) Composition : Main unit, Probe, B/W printer 2) Monitor : Color LCD 17 inch or more 3) Function : B, M, Color doppler 4) Probes : Sector, Linear, Convex	3
MC-09	Neonate	Ultrasonic diagnostic apparatus, neonate	1) Composition : Main unit, Probe, B/W printer 2) Monitor : Color LCD 17 inch or more 3) Function : B, M, Color doppler 4) Probes : Sector, Convex for neonate head	1
MC-10	Endoscopy	Video gastroscope A	1) Gastrointestinal Videoscope Working length : 1,030mm or longer Distal end diameter : 9.9 mm or less Viewing direction : 0° Bending : Up 210°/ Down 90° / Right 100°/Left 100° or more Forceps channel diameter : 2.8mm or more Air / water nozzle : 1pc. 2) Instruments Biopsy, Diathermy, Grasping, Retrieval basket etc.	2
MC-11	Endoscopy	Video gastroscope B	1) Gastrointestinal Videoscope Working length : 1,030mm or longer Distal end diameter : 5.5 mm or less Viewing direction : 0° Bending : Up 210°/ Down 90° / Right 100°/Left 100° or more Forceps channel diameter : 2.0 mm or more Air / water nozzle : 1pc. 2) Instruments Biopsy, Diathermy, Grasping, Retrieval basket etc.	2
MC-12	Endoscopy	Video gastroscope C	1) Gastrointestinal Videoscope Working length : 1,030mm or longer Distal end diameter : 9.9 mm or less Viewing direction : 0° Bending : Up 210°/ Down 90° / Right 100°/Left 100° or more Forceps channel diameter : 2.8mm or more Air / water nozzle : 1pc. 2) Instruments Biopsy, Diathermy, Grasping, Retrieval basket etc.	2
MC-13	Endoscopy	Video endoscope system	1) Video system 2) Light source Xenon : 300W or more Emergency lamp : 35W halogen or more 3) LCD Monitor Size : Color 26 inch or more 4) Electrosurgical Unit Mode : Monopolar and bipolar Output : Max. 120W or more	1

Short specification for major items (Scientific Research Institute in the field of Mother and Child Health)

Item No.	Dept.	Description	Simple specifications	Q'ty
MC-14	Endoscopy	Video bronchoscope	1) Bronchovideoscope Working length : 600mm or longer Distal end diameter : 4.8 mm or less Viewing direction : 0° Bending : Up 210°/ Down 130° / Right 120°/Left 120° or more Forceps channel diameter : 2.0mm or more Air / water nozzle : 1pc. 2) Instruments Biopsy, Diathermy, Grasping, Retrieval basket etc.	1
MC-15	Endoscopy	Video endoscope system	1) Video system 2) Light source Xenon : 300W or more Emergency lamp : 35W halogen or more 3) LCD Monitor Size : Color 26 inch or more 4) Electrosurgical Unit Mode : Monopolar and bipolar Output : Max. 120w or more	1
MC-16	Endoscopy	Bronchoscope, pediatric, rigid	Composition and specifications : 1) Telescope : 5 - 6mm 0/30/75 degree each 1 pc. 2) Trocar sleeve and spike each 2 pcs. 3) Hand instruments Grasping forceps, dissection forceps, scissors, hook, clip etc. 4) Light-guide cable 5) Video System 6) Light Source Xenon : 300W or more Emergency lamp : 35W halogen or more 7) LCD Monitor Size : Color 26 inch or more 8) Camera head 9) Insufflation unit 10) Image management unit 11) Electrosurgical unit Mode : Monopolar and bipolar Output : Max. 120w or more 12) Suction-irrigation pump unit	1
MC-17	Endoscopy	Cystoscope, pediatric, rigid	Composition and specifications : 1) Tele scope : 1.9 mm 30 degree 1pc. 2) Light-guide cable 3) Attachments with Self-Sealing Caps 4) Tray for Hand instruments 5) Cystoscope Sheath 6) Working insert : 1channel 7) Hand Instruments : Grasping, biopsy and button electrode 8) Video System 9) Light Source Xenon : 300W or more Emergency lamp : 35W halogen or more 10) LCD Monitor Size : Color 26 inch or more 11) Camera head 12) Electrosurgical unit Mode : Monopolar and bipolar Output : Max. 120w or more	1

Short specification for major items (Scientific Research Institute in the field of Mother and Child Health)

Item No.	Dept.	Description	Simple specifications	Q'ty
MC-18	Endoscopy	Endoscope washer disinfector	1) Washing method : Ultrasound and water flow 2) Simultaneous washing : Endoscope 1 set or more	3
MC-21	Operation, Pediatric	Neuroeedoscope set with video system	Composition and specifications : 1) Telescope : 4-5mm 0/30/75/120 degree each 2 pcs. 2) Trocars and Accessories: rotatable with 2 cooks with triangular/blunt spike each 2 pcs. 3) Hand instruments 4) Insert Tray for Hand instruments 5) Light-guide cable 6) Insert Tray for Arthroscopy 7) Video System Center 8) Light Source 9) LCD Monitor 10) HD camera head	1
MC-22	Operation, Obstetric	Anesthesia apparatus	1) Composition : Main unit, Ventilator, Vaporizer, Anesthesia monitor 2) Applicable patient : Adult 3) Gas: Oxygen, N2O, Air 4) Vaporizer : Halothane, Sevofroren	8
MC-23	Operation, Pediatric	Anesthesia apparatus	1) Composition : Main unit, Ventilator, Vaporizer, Anesthesia monitor 2) Applicable patient : Adult and children 3) Gas: Oxygen, N2O, Air 4) Vaporizer : Halothane, Sevofroren	6
MC-24	ICU, Neonate	Ventilator, HFO	1) Ventilation mode :CMV、SIMV、CPAP、PS, HFO or more 2) Type : Movable 3) Applicable patient : Neonate and pediatric 4) Accessories : Humidifier, reusable patient circuit 5) Aircompressore : Equipped	2
MC-26	ICU,Obstetric	Patient monitor	1) Measurement item : :ECG, Ventilation, SpO2, NIBP, Body temp. 2) Application : Adult 3) Display : Color LCD 12 inch or more 4) Trolley with caster : Equipped	10
MC-27	ICU,Obstetric	Patient monitor	1) Measurement item : :ECG, Ventilation, SpO2, NIBP, Body temp. 2) Application : Adult 3) Display : Color LCD 12 inch or more 4) Trolley with caster : Equipped	25
MC-28	ICU, Neonate	Patient monitor	1) Measurement item : :ECG, Ventilation, SpO2, NIBP, Body temp. 2) Application : Neonate 3) Display : Color LCD 12 inch or more 4) Trolley with caster : Equipped	15
MC-29	Delivery room	Cardiotocograph	1) Application : CTG measurement 2) Measure item : FHR and contraction 3) FHR range : 30 - 200 bpm or wider 4) Trolley : Equipped	10

Short specification for major items (Scientific Research Institute in the field of Mother and Child Health)

Item No.	Dept.	Description	Simple specifications	Q'ty
MC-30	Laboratory	Hematology analyzer	1) Measurement item : WBC, RCB, PLT, HGB WBC diff 8 or more 2) Principal : Flowcytometory and hemolyzing method 3) Measuring speed : 100 samples/hr or more 4) Auto sampler : Equipped	1
MC-32	Laboratory	Immunology analyzer	1) Measurement item : HAV, HBs, HCV, HDV, ACTH, CTT, FSH, LT, 17-CS, T3, T4, TSH or more 2) Method : Random access 3) Measuring speed : 180 samples/hr. or more 4) STAT sample : Available 5) Sample tube :5 - 10 mL	1
MC-33	Laboratory	Biochemical analyzer	1) Measurement item : GOT, GPT, ALP, LDH, γ-GPT, CK, AMY, BUN, CRE, UA, TCHO, TG, HDL, TP, ALB, Ca, Na, K, Cl or more 2) Method : Discrete 3) Measurieng speed : 200 test / hr or morre 4) STAT samaple : Available 5) Sample volume : 500μL or less 6) ISE : Equipped	1
MC-34	Laboratory	Coagulometer	1) Measurement item : PT, APTT, Fbg, TTO, HpT, AST-III, PLG, FDP, D Dimer or more 2) Measuring speed : Max. 110 test/hr or more, 5 item simultaneous measurement 60 test/hr or more 3) Measuring time : PT, Fbg 110s or less, Others 200 s or less	1
MC-35	Laboratory	Urinealizer	1) Measurement item : Glucose, Protein, Bilirubin, Urobinogen, pH, Occult blood, ketone body or more 2) Method : Qualitative analysis by test paper and material analysis 3) Measuring speed : Urine qualitative 150 samples/hr or more 4) Sample volume : 6mL or less	1
MC-36	Functional diagnostics	EEG	1) Application : EEG for adult and pediatric 2) Channel : 200 channels or more 3) Composition : Main unit, Electrode connection box, Light stimulator, Sound stimulator with headphone, Electrode, Rack with trolley, Analyze program	2
MC-37	Functional diagnostics	EMG	1) Application : EMG for adult and pediatric 2) Channel : 2 channels or more 3) Stimulation unit : Electrical, sound and photo stimulation 4) Composition : Main unit, Signal box, EMG/NCS/SEP measurering kit, Rack with trolley, Analyze program	1
MC-38	Functional diagnostics	Polysomnograph	1) Application : Polysomnograph for adult and pediatric 2) Measurement item : EEG, Eye movement, Genioglossal muscle, ECG, Leg EMG, Ventilation, Snore, Ventilation pressure, Body position, SpO2, EtCO2 or more 3) Composition : Main unit, Signal input box, Electrode/sensor kit, Rack with trolley, Analyze program	1
MC-39	Ambulance	Ambulance, type C, neonate	1) Type : C type ambulance 2) Medical equipment : Infant incubator, Ventilator, Stretcher, Defibrillator, Monitor, Oxygen inhalation set, Endotracheal set, Suction set or more	1

Short specification for major items (Scientific Research Institute in the field of Mother and Child Health)

Item No.	Dept.	Description	Simple specifications	Q'ty
MC-40	Ambulance	Ambulance, type C, pediatric	1) Type : C type ambulance 2) Medical equipment : Infant incubator, Ventilator, Stretcher, Defibrillator, Monitor, Oxygen inhalation set, Endotracheal set, Suction set or more	1
MC-42	Genetic investigation	Amino acid analyzer	1) Measurement item : Hydrosis amino acid (15 types or more), Biological free amino acid（40 types or more), Abnormal amino acid (50 types or more) 2) Analysis method :HPLC by Ninhydrin colorimetric method 3) Measuring time : Hydrosis amino acid(25 min or less),Biological free amino acid (80 min or less)	1
MC-47	Genetic investigation	Real time polymerase chain reaction (QF-PCR) apparatus	1) Application : DNA/RNA Quantitate analysis 2) Composition : Main unit, computer 3) Heat / Cool method : Perche material 4) Temperature setting : 10 - 99 deg. C or wider 5) Max heating/cooling speed : 3.0/2.4 deg. C or more 6) Fluorescent excitation : LED 7) Fluorescent detection : CCD camera 8) Simultaneous measurement sample : 48 or more 9) Sample volume : 25 - 50 μL 10) Analyzing program : Equipped	1
MC-48	Genetic investigation	Ultrasonic diagnostic apparatus, obstetric B	1) Composition : Main unit, Probe, B/W printer 2) Monitor : Color LCD 17 inch or more 3) Function : B, M, Color doppler 4) Probes : Convex, Linear , both with biopsy adapter	1
MC-49	Genetic investigation	Perspiration analyzer (mucoviscidosis diagnosis)	1) Minimum sample volume : 6 - 10 μL or less 2) Measurement range : 0 - 150 mmol/L or wider 3) Warm-up time : 3 min. or less 4) Specimen collection : By coiled micro tubing	3
MC-50	Operation room	Defibrillator for pediatric	1) Application : Adult and Pediatric 2) Display : 7 inch or more 3) Max output : 360J or more 4) Measurement item : ECG 5) Recorder : Equipped 6) Safety standard : CF 7) Emergency cart : Equipped	1
MC-101	ICU No. 1	Defibrillator for pediatric	1) Application : Adult and Pediatric 2) Display : 7 inch or more 3) Max output : 360J or more 4) Measurement item : ECG 5) Recorder : Equipped 6) Safety standard : CF 7) Emergency cart : Equipped	5
MC-102	ICU No. 2	Defibrillator for pediatric	1) Application : Adult and Pediatric 2) Display : 7 inch or more 3) Max output : 360J or more 4) Measurement item : ECG 5) Recorder : Equipped 6) Safety standard : CF 7) Emergency cart : Equipped	1

Short specification for major items (Scientific Research Institute in the field of Mother and Child Health)

Item No.	Dept.	Description	Simple specifications	Q'ty
MC-107	Operation room	Anesthesia apparatus	1) Composition : Main unit, Ventilator, Vaporizer, Anesthesia monitor 2) Applicable patient : Adult 3) Gas: Oxygen, N2O, Air 4) Vaporizer : Halothane, Sevofroren	5
MC-108	Operation room	Electrodermatome	1) Type : Electrical type 2) Application : Skin abruption for transplant 3) Picking skin width : 40 - 80 mm or wider 4) Main body : Autoclavable	5
MC-109	Operation room	Skin grafts perforator	1) Type : Manual operation 2) Application : Incisures honeycomb condition for abrupted skin	1
MC-110	ICU No. 1	Central monitoring system	(Central monitors) 1 unit 1) Connectable monitor : 6 units or more 2) Display : Color LCD 12 inch or more (Patient monitor) 5 units 1) Display : Color LCD 12 inch or more 2) Trolley with caster : Equipped	1
MC-111	ICU No. 1	Patient monitor	1) Measurement item : :ECG, Ventilation, SpO2, NIBP, Body temp. 2) Application : Pediatric 3) Display : Color LCD 12 inch or more 4) Trolley with caster : Equipped	5
MC-112	ICU No. 2	Patient monitor	1) Measurement item : :ECG, Ventilation, SpO2, NIBP, Body temp. 2) Application : Pediatric 3) Display : Color LCD 12 inch or more 4) Trolley with caster : Equipped	5
MC-113	ENT	ENT examination unit with chair	1) Composition : Main unit, Patient chair, Examination lamp 2) Accessories for main unit : Medicine stand, Instruments stand, Spray set - 2 sets or more, Suction set - 1 set or more	1
MC-115	ENT	Microdebrider	1) Type : Electrical type 2) Application : Microdebriding 3) Debriding head : 3 types or more	1
MC-117	Audiology	Impedance audiometer	1) Application : Diagnostic 2) Composition : Main unit, Impedance probe, Air receiver etc. 3) Function : Tympanometry test, Reflex test etc.	2
MC-118	Audiology	Audiometer	1) Application : Diagnostic 2) Composition : Main unit, Earphone/headphone, bone conduction adapter, Patient response switch etc. 3) Function : Pure audiometry, air / bone hearing test automatic test etc.	2
MC-119	Radiology	Panorama X-ray apparatus	1) Application : Dental panorama X-ray 2) Type : Digital 3) X-ray tube voltage : 60 - 70kV or wider 4) X-ray tube current : 1 - 7.5mA or wider 5) Shooting time : 11 s or less 6) Picture enlargement : 1.23-1.3 or wider	2

Short specification for major items (Oncologic Institute)

Item No.	Dept.	Description	Simple specifications	Q'ty
OI-01	Policlinic, imaging diagnosis	CT	1) Composition : Gantry, Patient couch, Console, Power distributor, Injector etc. 2) No. of detector : 64 pcs. or more 3) No. of slice : 64 slices or more 4) Scan field : 180 - 500 mm or more 5) Slice thickness : 0.5 - 8mm or more	1
OI-02	Policlinic, imaging diagnosis	Ultrasonic diagnostic apparatus, general A	1) Composition : Main unit, Probe, B/W printer 2) Monitor : Color LCD 17 inch or more 3) Function : B, M, Color doppler 4) Probes : Convex, Linear , Transvaginal	1
OI-03	Policlinic, imaging diagnosis	Ultrasonic diagnostic apparatus for biopsy and elastography	1) Composition : Main unit, Probe, B/W printer 2) Monitor : Color LCD 17 inch or more 3) Function : B, M, Color doppler, elastography 4) Probes : Convex, Linear , both with biopsy adapter	1
OI-04	Policlinic, imaging diagnosis	Digital mammography with laser imager	1) Composition : Main unit, Control unit, Work station 2) Type : Digital 3) X-ray tube voltage : 40kV or more	2
OI-05	Policlinic, endoscopy	Video laryngoscope	1) Video Laryngoscope Working length : 1,030mm or longer Distal end diameter : 9.9 mm or less Viewing direction : 0° Bending : Up 210°/ Down 90° / Right 100°/Left 100° or more Forceps channel diameter : 2.8mm or more Air / water nozzle : 1pc. 2) Instruments Biopsy, Diathermy, Grasping, Retrieval, Needle, Cytology brush, Needle, Suction needle etc.	1
OI-06	Policlinic, endoscopy	Video bronchoscope	1) Bronchovideoscope Working length : 600mm or longer Distal end diameter : 5.5 mm or less Viewing direction : 0° Bending : Up 210°/ Down 130° / Right 120°/Left 120° or more Forceps channel diameter : 2.0mm or more Air / water nozzle : 1pc. 2) Instruments Biopsy, Diathermy, Grasping, Retrieval basket etc.	2
OI-07	Policlinic, endoscopy	Video gastroscope	1) Gastrointestinal Videoscope Working length : 1,030mm or longer Distal end diameter : 9.9 mm or less Viewing direction : 0° Bending : Up 210°/ Down 90° / Right 100°/Left 100° or more Forceps channel diameter : 2.8mm or more Air / water nozzle : 1pc. 2) Instruments Biopsy, Diathermy, Grasping, Retrieval, Needle, Cytology brush, Needle, Suction needle etc.	1
OI-08	Policlinic, endoscopy	Video colonoscope	1) Colono Videoscope Working length : 1,680mm or longer Distal end diameter : 13.2 mm or less Viewing direction : 0° Bending : Up 180°/ Down 180° / Right 160°/Left 160° or more Forceps channel diameter : 3.7mm or more Air / water nozzle : 1pc. 2) Instruments Biopsy, Diathermy, Grasping, Retrieval, Needle, Clipping etc.	4

Short specification for major items (Oncologic Institute)

Item No.	Dept.	Description	Simple specifications	Q'ty
OI-09	Policlinic, endoscopy	Video endoscope system	1) Video system 2) Light source Xenon : 300W or more Emergency lamp : 35W halogen or more 3) LCD Monitor Size : Color 26 inch or more 4) Electrosurgical Unit Mode : Monopolar and bipolar Output : Max. 120w or more	5
OI-10	Policlinic, endoscopy	Endoscope washer disinfector	1) Washing method : Ultrasound and water flow 2) Simultaneous washing : Endoscope 1 set or more	5
OI-11	ICU	Ventilator	1) Ventilation mode : CMV、SIMV、CPAP、PS or more 2) Applicable patient : Adult and pediatric or more 3) Accessories : Humidifier, Reusable patient circuit (3 sets or more) or more 4) Air compressor : Use external supply	23
OI-12	ICU	Ventilator neonate	1) Ventilation mode : CMV、SIMV、CPAP、PS or more 2) Applicable patient : Neonate or more 3) Accessories : Humidifier, Reusable patient circuit (3 sets or more) or more 4) Air compressor : Use external supply	1
OI-13	ICU	Patient monitor	1) Measurement item : :ECG, Ventilation, SpO2, NIBP, Body temp. 2) Application : Adult, Pediatric 3) Display : Color LCD 12 inch or more 4) Trolley with caster : Equipped	24
OI-14	ICU	Mobile X-ray	1) Composition : Main unit, IP plate 2) X-ray generator : Inverter type 3) kV range : 40 - 125 kV or more 4) mAs range : 0.5 - 100 mAs or more	2
OI-15	OR	Anesthesia machine	1) Composition : Main unit, Ventilator, Vaporizer, Anesthesia monitor 2) Applicable patient : Adult 3) Gas: Oxygen, N2O, Air 4) Vaporizer : Halothane, Sevofroren	19
OI-16	OR	Anesthesia machine, Pediatric	1) Composition : Main unit, Ventilator, Vaporizer, Anesthesia monitor 2) Applicable patient : Adult, Pediatric 3) Gas: Oxygen, N2O, Air 4) Vaporizer : Halothane, Sevofroren	1
OI-17	OR	Patient monitor	1) Measurement item : :ECG, Ventilation, SpO2, NIBP, Body temp. 2) Application : Adult, Pediatric 3) Display : Color LCD 12 inch or more 4) Trolley with caster : Equipped	20
OI-18	OR	Video gastroscope	1) Gastrointestinal Videoscope Working length : 1,030mm or longer Distal end diameter : 9.9 mm or less Viewing direction : 0° Bending : Up 210°/ Down 90° / Right 100°/Left 100° or more Forceps channel diameter : 2.8mm or more Air / water nozzle : 1pc. 2) Instruments Biopsy, Diathermy, Grasping, Retrieval, Needle, Cytology brush, Needle, Suction needle etc.	2

Short specification for major items (Oncologic Institute)

Item No.	Dept.	Description	Simple specifications	Q'ty
OI-19	OR	Video colonoscope	1) Colono Videoscope Working length : 1,680mm or longer Distal end diameter : 13.2 mm or less Viewing direction : 0° Bending : Up 180°/ Down 180° / Right 160°/Left 160° or more Forceps channel diameter : 3.7mm or more Air / water nozzle : 1pc. 2) Instruments Biopsy, Diathermy, Grasping, Retrieval, Needle, Clipping etc.	2
OI-20	OR	Video bronchoscope	1) Bronchovideoscope Working length : 600mm or longer Distal end diameter : 5.5 mm or less Viewing direction : 0° Bending : Up 210°/ Down 130° / Right 120°/Left 120° or more Forceps channel diameter : 2.0mm or more Air / water nozzle : 1pc. 2) Instruments Biopsy, Diathermy, Grasping, Retrieval basket etc.	2
OI-21	OR	Vidoendoscope system	1) Video system 2) Light source Xenon : 300W or more Emergency lamp : 35W halogen or more 3) LCD Monitor Size : Color 26 inch or more	1
OI-22	OR	Electrosurgical unit for endoscopy	1) Mode : Monopolar and bipolar 2) Output : Max. 120w or more	1
OI-24	OR	Laparoscope set	Composition and specifications : 1) Telescope : 10mm 0/30/75 degree each 1 pc. 2) Trocar sleeve and spike each 2 pcs. 3) Hand instruments Grasping forceps, dissection forceps, scissors, hook, clip etc. 4) Light-guide cable 5) Video System 6) Light Source Xenon : 300W or more Emergency lamp : 35W halogen or more 7) LCD Monitor Size : Color 26 inch or more 8) Camera head 9) Insufflation unit 10) Image management unit 11) Electrosurgical unit Mode : Monopolar and bipolar Output : Max. 120w or more 12) Insufflation unit	1
OI-26	OR	C-arm, mobile	1) Composition : Main unit , Display unit 2) Type : Mobile C-arm unit 3) DSA : Fluoroscopy 30fps or more 4) X-ray generator : 40 - 110 kV/Max. 20 mA or more 5) X-ray tube : 100kHU or more 6) Display : 18 inch 2 set or more	1

Short specification for major items (Scientific-Practical Center for Emergency Medicine)

Item No.	Dept.	Description	Simple specifications	Q'ty
EH-01	Imaging diagnosis	Angiography	1) Composition : C-arm, X-ray generator, Image processor, DSA unit, Catheter table, Catheter laboratory, TV monitor, Injector 2) Type : Ceiling fixing, single plane 3) Application : Cardiorogy and neurosurgery 4) X-ray generator : 150kW 5) X-ray tube : 1.5MHU 6) DSA unit : 30 fps or more 7) Flap panel : 12 inch or more	1
EH-02	Imaging diagnosis	CT	1) Composition : Gantry, Patient couch, Console, Power distributor, Injector etc. 2) No. of detector : 64 pcs. or more 3) No. of slice : 64 slices or more 4) Scan field : 180 - 500 mm or more 5) Slice thickness : 0.5 - 8mm or more	1
EH-03	Imaging diagnosis	MRI 1.5T	1) Conposition : Gantry, Patient table, Control console, Refrigerator,Phantom 2) Gantry Magnetic field : 1.5T or more Cooling material : Liquid nitrogen RF coil : Whole body, Head, Anterior neck, Spine, Body, Breast, 4ch Flex, QD knee/foot etc. 3) Patient table Movement : Adjustable by electrical control 4) Control console Program package : Equipped	1
EH-04	Imaging diagnosis	X-ray, Fluoroscopy with general	1) Composition : X-ray generator, Fluoroscopy unit, Bucky table, Bucky stand, X-ray tube with support, Remote control unit, X-ray exposure controller 2) X-ray generator Radiology setting : 40 - 150kV/20 - 500 mA or more Fluoroscopy setting : 50 - 120kV/0.5 - 4.0 mA or more Automatic brightness control and excessive X-ray preventive control : Equipped 3) Fluoroscopy unit Type : Digital flap panel system Image input : 1024 x 1024 pixels 8 bit or more Network : DICOM 4) X-ray tube with support Capacity : 250kHU or more 5) Fluorosocopy remote control unit Monitor : 20 inch or more	1
EH-05	Imaging diagnosis	Mobile X-ray	1) Composition : Main unit, CR plate 2) X-ray generator : Inverter type 3) kV range : 40 - 125 kV or more 4) mAs range : 0.5 - 100 mAs or more	4
EH-06	OR	Operation table, general	1) Application : General surgery 2) Type : Electrical control 3) Section : 4 or more 4) Table top : 1,950 x 500 mm or more 5) Back section : Up 90° Down 40° or more 6) Head section : Up 60° Down 90° or more	9

Short specification for major items (Scientific-Practical Center for Emergency Medicine)

Item No.	Dept.	Description	Simple specifications	Q'ty
EH-07	OR	Operation table, orthopedic	1) Application : Orthopedic surgery 2) Type : Electrical control 3) Section : 4 or more 4) Table top : 1,950 x 500 mm or more 5) Back section : Up 90° Down 40° or more 6) Head section : Up 60° Down 90° or more 7) Leg extraction table : Equipped	5
EH-08	OR	Operation table, neurosurgery	1) Application :Neurosurgery 2) Type : Electrical control 3) Section : 4 or more 4) Table top : 1,950 x 500 mm or more 5) Back section : Up 90° Down 40° or more 6) Head section : Up 60° Down 90° or more 7) Head fixing unit : Equipped	2
EH-09	ICU	Ventilator	1) Ventilation mode : CMV、SIMV、CPAP、PS or more 2) Applicable patient : Adult and pediatric or more 3) Accessories : Humidifier, Reusable patient circuit (3 sets or more) or more 4) Air compressor : Use external supply	22
EH-10	Endoscopy dept.	Video gastroscope, Therapic	1) Gastrointestinal Videoscope Working length : 1,030mm or longer Distal end diameter : 9.9 mm or less Viewing direction : 0° Bending : Up 210°/ Down 90° / Right 100°/Left 100° or more Forceps channel diameter : 2.8mm or more Air / water nozzle : 1pc. 2) Instruments Biopsy, Diathermy, Grasping, Retrieval basket etc.	2
EH-11	Endoscopy dept.	Video gastroscope, Diagnostic	1) Gastrointestinal Videoscope Working length : 1,030mm or longer Distal end diameter : 9.9 mm or less Viewing direction : 0° Bending : Up 210°/ Down 90° / Right 100°/Left 100° or more Forceps channel diameter : 2.8mm or more Air / water nozzle : 1pc. 2) Instruments Biopsy, Diathermy, Grasping, Retrieval basket etc.	2
EH-12	Endoscopy dept.	Video duodenoscope, ERCP	1) Duedeno videoscope Working length : 1,240mm or more Distal end diameter : 13.7mm or less Viewing direction : Opposite side 5° Bending : Up 210°/ Down 90° / Right 110°/ Left 90° or more Forceps channel diameter : 4.2mm or more Air / water nozzle : 1pc. 2) Instruments Cannula, Guide wire, Triple lumen sphiceterotome, Basket sheath, Mechanical lithotripter, Stone retrieval basket, Stone extraction balloon, Biliary drainage tube, Plastic stent system, Cytology brush	1

Short specification for major items (Scientific-Practical Center for Emergency Medicine)

Item No.	Dept.	Description	Simple specifications	Q'ty
EH-13	Endoscopy dept.	Video colonoscope	1) Colono videoscope Working length : 1,680mm or more Distal end diameter : 13.2mm or less Viewing direction : 0° Bending : Up 180°/ Down 180° / Right 160°/ Left 160° or more Forceps channel diameter : 3.7 mm or more Air / water nozzle : 1pc. 2) Instruments Biopsy forceps, Grasping forceps, Retrieval basket with handle, Injection needle with sheath, Clip device	1
EH-14	Endoscopy dept.	Video endoscope system	1) Video system 2) Light source Xenon : 300W or more Emergency lamp : 35W halogen or more 3) LCD Monitor Size : Color 26 inch or more 4) Electrosurgical Unit Mode : Monopolar and bipolar Output : Max. 120w or more	4
EH-15	Endoscopy dept.	Endoscope washer disinfector	1) Washing method : Ultrasound and water flow 2) Simultaneous washing : Endoscope 1 set or more	1
EH-16	Endoscopy dept.	Laparoscope set	Composition and specifications : 1) Telescope : 10mm 0/30/75 degree each 1 pc. 2) Trocar sleeve and spike each 2 pcs. 3) Hand instruments Grasping forceps, dissection forceps, scissors, hook, clip etc. 4) Light-guide cable 5) Video System 6) Light Source Xenon : 300W or more Emergency lamp : 35W halogen or more 7) LCD Monitor Size : Color 26 inch or more 8) Camera head 9) Insufflation unit 10) Image management unit 11) Electrosurgical unit Mode : Monopolar and bipolar Output : Max. 120w or more	1
EH-17	Endoscopy dept.	Artroscope	Composition and specifications : 1) Telescope : 4-5mm 0/30/75 degree each 2 pcs. 2) Trocars and Accessories: rotatable with 2 cooks with triangular/blunt spike each 2 pcs. 3) Hand instruments 4) Insert Tray for Hand instruments 5) Light-guide cable 6) Insert Tray for Arthroscopy 7) Video System Center 8) Light Source 9) LCD Monitor 10) HD camera head	1

Short specification for major items (Chisinau Municipal Clinical Hospital "Sfanta Treime")

Item No.	Dept.	Description	Simple specifications	Q'ty
ST-01	Imaging Diagnosis	Angiography, biplane	1) Composition : C-arm, X-ray generator, Image processor, DSA unit, Catheter table, Catheter laboratory, TV monitor, Injector 2) Type : Ceiling fixing, single plane 3) Application : Cardiorogy and neurosurgery 4) X-ray generator : 150kW 5) X-ray tube : 1.5MHU 6) DSA unit : 30 fps or more 7) Flap panel : 12 inch or more	1
ST-02	Imaging Diagnosis	CT	1) Composition : Gantry, Patient couch, Console, Power distributor, Injector etc. 2) No. of detector : 64 pcs. or more 3) No. of slice : 64 slices or more 4) Scan field : 180 - 500 mm or more 5) Slice thickness : 0.5 - 8mm or more	1
ST-03	Imaging Diagnosis	MRI 1.5T	1) Conposition : Gantry, Patient table, Control console, Refrigerator,Phantom 2) Gantry Magnetic field : 1.5T or more Cooling material : Liquid nitrogen RF coil : Whole body, Head, Anterior neck, Spin, Body, Breast, 4ch Flex, QD knee/foot etc. 3) Patient table Movement : Adjustable by electrical control 4) Control console Program package : Equipped	1
ST-04	Imaging Diagnosis	X-ray, Fluoroscopy with general	1) Composition : X-ray generator, Fluoroscopy unit, Bucky table, Bucky stand, X-ray tube with support, Remote control unit, X-ray exposure controller 2) X-ray generator Radiology setting : 40 - 150kV/20 - 500 mA or more Fluoroscopy setting : 50 - 120kV/0.5 - 4.0 mA or more Automatic brightness control and excessive X-ray preventive control : Equipped 3) Fluoroscopy unit Type : Digital flat panel system Image input : 1024 x 1024 pixels 8 bit or more Network : DICOM 4) X-ray tube with support Capacity : 250kHU or more 5) Fluorosocopy remote control unit Monitor : 20 inch or more	1
ST-05	Imaging Diagnosis	Ultrasonic diagnostic apparatus, general B	1) Composition : Main unit, Probe, B/W printer 2) Monitor : Color LCD 17 inch or more 3) Function : B, M, Color doppler 4) Probes : Convex, Linear , Transvaginal	1
ST-06	Functional diagnosis	Ultrasonic diagnostic apparatus, Cardiac	1) Composition : Main unit, Probe, B/W printer 2) Monitor : Color LCD 17 inch or more 3) Function : B, M, Color doppler, 4D 4) Probes : Convex, Convex 4D, Linear , Transvaginal, Sector	1
ST-07	ICU	Ventilator	1) Ventilation mode : CMV、SIMV、CPAP、PS or more 2) Applicable patient : Adult and pediatric or more 3) Accessories : Humidifier, Reusable patient circuit (3 sets or more) or more 4) Air compressor : Use external supply	16

Short specification for major items (Chisinau Municipal Clinical Hospital "Sfanta Treime")

Item No.	Dept.	Description	Simple specifications	Q'ty
ST-08	ICU	Blood gas analyzer	1) Measurment itme : pH, pCO2, PO2, K+, Na+, Ca+,Cl-, Hct 2) Measuring time ; 120s or less 3) Sample volume : 80μL or less	1
ST-09	OR	Anesthesia machine	1) Composition : Main unit, Ventilator, Vaporizer, Anesthesia monitor 2) Applicable patient : Adult 3) Gas: Oxygen, N2O, Air 4) Vaporizer : Halothane, Sevofroren	10
ST-10	OR	Laparoscope set, abdomen	Composition and specifications : 1) Telescope : 10mm 0/30/75 degree each 2 pcs. 2) Trocar sleeve and spike each 2 pcs. 3) Hand instruments Grasping forceps, dissection forceps, scissors, hook, clip etc. 4) Light-guide cable	2
ST-11	OR	Laparoscope set, gynecology	Composition and specifications : 1) Telescope : 10mm 0/30/75 degree each 1 pc. 2) Trocar sleeve and spike each 2 pcs. 3) Hand instruments Grasping forceps, dissection forceps, scissors, hook, clip etc. 4) Light-guide cable	1
ST-12	OR	Laparoscope set, trachesurgery	Composition and specifications : 1) Telescope : 5.4mm 0/30/75 degree each 1 pc. 2) Trocar sleeve and spike each 2 pcs. 3) Hand instruments Grasping forceps, dissection forceps, scissors, hook, clip etc. 4) Light-guide cable	1
ST-13	OR	Uretheroscope set	Composition and specifications : 1) Uretheroscope 4.2Fr. 7degree 2) Light-guide cable 3) Telescope 4 mm 12degree 4) Sheath Size : 22 Fr. Channel : 4Fr. 5) Hand instruments Knife and guide wire	1
ST-14	OR	Nephroscope set	Composition and specifications : 1) Uretheroscope 6Fr. 7degree 2) Bugie set 9 - 28 Fr. 3) Hand instruments Grasping, Biopsy, Knife, Diathermy etc. 4) Light-guide cable	1
ST-15	OR	Lithotriptomy set, pneumatic	1) Composition : Main unit, Probes 2) Main unit Type : Pneumatic type Input gas : Oxygen and/or compressed dry air Output pressure : 0 - 5kg/cms2 Impact frequency : Single and varios continuous pulse mode 3) Probe Uretero scope : 0.8, 1. 1.1, 1.2, 1.4, 1,5 mm, Length 610mm Percutaneous nephrolithotomy probe : 2.5, 3 mm, Length 450 mm Lithobridge probe : 1.5mm,Length 460 mm	1

Short specification for major items (Chisinau Municipal Clinical Hospital "Sfanta Treime")

Item No.	Dept.	Description	Simple specifications	Q'ty
ST-16	OR	TUR set	1) Resectoscope Telescope : 4mm 12/30degree Sheath : 2 stopcocks 2) HF-Resection Electrodes Loop 12/30 degree each 10 pcs. Roller 12/30 degree each 20 pcs.	1
ST-17	OR	TV set for urology endoscopy	1) Video system 2) Light source Xenon : 300W or more Emergency lamp : 35W halogen or more 3) LCD Monitor Size : Color 26 inch or more 4) Electrosurgical Unit Mode : Monopolar and bipolar Output : Max. 120w or more 5) Insufflation unit	1
ST-18	OR	C-arm	Composition : Main unit , Display unit Type : Mobile C-arm unit DSA : Fluoroscopy 30fps or more X-ray generator : 40 - 110 kV/Max. 20 mA or more X-ray tube : 100kHU or more Display : 18 inch 2 set or more	1
ST-19	OR	Operation table	Application : General surgery Type : Electrical control Section : 4 or more Table top : 1,950 x 500 mm or more Back section : Up 90° Down 40° or more Head section : Up 60° Down 90° or more	1
ST-20	OR	ESWL	1) Composition : Lithotripter, X-ray localization system, Ultrasound localization system, Treatment table, Patient monitoring system 2) Lithotripter Shock wave source : Electromagnetic type Focus pressure : 16 - 110 MPa or more Shock wave penetration depth : 150mm or more Shock wave frequency : 1 - 3 SW/sec or more, ECG triggered 3) X-ray localization system Type : C-arm 4) Ultrasound localization system Monitor : B&W LCD or more Probe : Linear and convex Imaging mode : B and M 5) Treatment table Type : Hydraulic positioning, Electrical control X-ray localization : Available 6) Patient monitoring system Monitoring parameter : ECG 1ch Shock wave triggering : Available	1

Short specification for major items (Chisinau Municipal Clinical Hospital "Sfanta Treime")

Item No.	Dept.	Description	Simple specifications	Q'ty
ST-21	Endoscope	Video esophagus scope with TV system	1) Gastrointestinal Videoscope Working length : 1,030mm or longer Distal end diameter : 9.9 mm or less Viewing direction : 0° Bending : Up 210°/ Down 90° / Right 100°/Left 100° or more Forceps channel diameter : 2.8mm or more Air / water nozzle : 1pc. 2) Instruments Biopsy, Diathermy, Grasping, Retrieval, Needle, Cytology brush, Needle, Suction needle etc. 3) Video system 4) Light source Xenon : 300W or more Emergency lamp : 35W halogen or more 5) LCD Monitor Size : Color 26 inch or more 6) Electrosurgical Unit Mode : Monopolar and bipolar Output : Max. 120w or more	1
ST-22	Ophthalmology	Slit lamp, OCT	Application : Optical Coherence Tomography for general screening Fundus surface imaging : OCT phase fundus Angle of view : 36° x 30° or more Scan pattern : 4 or more	1

Short specification for major items (National Center for Public Health)

Item No.	Dept.	Description	Simple specifications	Q'ty	
				Central	Regional
IP-1	Bacteology Lab.	ELISA System	1) Composition : Analyzing unit, Power supply unit, Computer, Incubation unit, Dispensing unit 2) Analyzing unit Measuring method : Single or double wave Wavelength : 340 - 650 nm or wider Half bandwidth : 5 - 10 nm or less 3) Computer unit Analyze program : Equipped 4) Incubation unit Incubation temperature : 37 deg. C Number of plate : 10 plates or more 5) Dispensing unit Number of vial : 15ml 20 bottles or more Dispensing volume : 25 - 300 μL or wider	3	0
IP-2	Bacteology Lab.	Automated DNA sequencer	1) Composition : Analyzing unit, Control unit 2) Analyzing unit Number of capillary : 8 pcs. or more Throughput Average run time : 135 min or less Average throughput : 80 sample/day or more Composition Capillary length : 50 cm 3) Control unit Software : Equipped	1	0
IP-3	Bacteology Lab.	Real Time PCR set	Application : DNA/RNA Quantitative analysis Composition : Main unit, computer Heat / Cool method : Perche material Temperature setting : 10 - 99 deg. C or wider Max heating/cooling speed : 3.0/2.4 deg. C or more Fluorescent excitation : LED Fluorescent detection : CCD camera Simultaneous measurement sample : 48 or more Sample volume : 25 - 50 μL Analyzing program : Equipped	0	3
IP-8	Bacteology Lab.	Automated Culture Media Preparatory	1) Capacity of media : 25 liters or more 2) System : Automatic mixing, sterilization and dispensing 3) Stirring : Equipped 4) User program : 20 or more	1	0
IP-9	Bacteology Lab.	Automatic colony counter	1) Camera : B/W camera, with perchie cooler 2) Dark area : Equipped with gel viewing window 3) Lighting : LED 4) Emission filter : 5 types or more 5) Software : Equipped	1	0
IP-19	Bacteology Lab.	CO2 Incubator	1) Type : Air jacket, natural convection 2) Temperature : room temp.+5 - 50 deg. C or wider 3) Humidity : 96%RH or more 4) Control : Microcomputer, PID 5) Chamber capacity : 70L or more	2	0
IP-23	Bacteology Lab.	Laboratory Freezer, ultra low	1) Type : Chest type ultra low freezer 2) Temperature range : -85 deg. C or less 3) Capacity : 300 L or more	1	3
IP-33	Sanitary Higienic Lab.	Gas Chromatograph, ECD/NPD detector	1) Colum temperature : Room temp. + 5 - 450 deg.C 2) Carry gas control : Electronically digital control 3) Hydrogen generator : Equipped 4) Sample injection : Automatic sampler 5) Sensor :FID, TCD, FTD, FPD, ECD or more	1	2
IP-34	Sanitary Higienic Lab.	Gas Chromatograph, FID mass-selective detectors	1) Ionization : EI method 2) Measuring range : 10 - 1000 *m/z* or wider 3) Measuring mode : Scan, SIM, MRM etc. 4) Max. scan speed : 20,000 μ/s or more 5) Sample injection : Automatic sampler	0	1

Short specification for major items (National Center for Public Health)

Item No.	Dept.	Description	Simple specifications	Q'ty	
				Central	Regional
IP-35	Sanitary Higienic Lab.	Liquid Chromatograph, 3 detectors	1) Composition : System controller, Solvent delivery unit, Auto sampler, Colum oven, Detector 2) System controller Connectable to all composed system 3) Solvent delivery unit Parallel type double plunger Plunger capacity : 10 μL or more Flow rate setting : 0.0001 - 10 mL/min. or wider 4) Auto sampler 50 samples or more 5) Colum oven Temperature control method : Forced air circulation Temperature setting : 5 - 85 deg. C or wider Storage capacity : 200L x 95W x 360H mm or more 6) Detector Light source : D2 lamp Wavelength : 190 - 700 nm or wider	1	1
IP-36	Sanitary Higienic Lab.	Gas Chromatograph, FID detector, automatic headspace sampler	1) Colum temperature : Room temp. + 5 - 450 deg.C 2) Carry gas control : Electronics control, digital control 3) Hydrogen generator : Equipped 4) Sample injection : Automatic sampler 5) Sensor :FID, TCD, FTD, FPD, ECD or more	0	1
IP-37	Sanitary Higienic Lab.	Gas Chromatograph, FID detector, thermal desorbe	1) Colum temperature : Room temp. + 5 - 450 deg.C 2) Carry gas control : Electronics control, digital control 3) Hydrogen generator : Equipped 4) Sample injection : Automatic sampler 5) Sensor :FID, TCD, FTD, FPD, ECD or more	0	1
IP-38	Sanitary Higienic Lab.	Ultra water purifier	1) System : Pre-filter, RO membrane, Active carbon and Ion exchange resin. 2) Supply volume : 0.5 L/min. or more	0	1
IP-40	Sanitary Higienic Lab.	Atomic absorption spectrophotometer	1) Measuring method : Double beam 2) Wavelength : 190 - 900 nm or wider 3) Burner : Air cooled pre-mix type 4) Gas flow control : Automatic 4) HCL : Mg, Al, Ca, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Se, Sr, Mo, Ag, Cd, Sn, Sb, Hg, Pb	1	2
IP-41	Sanitary Higienic Lab.	Solid phase extraction	1) Bond Elut Plexa cartridges 500 PCX cartridges 500 PAX cartridges 500 Mycotoxin cartridges 500 2) Luer stopcocks 500 3) Gildson adapter cap, 3 mL, 100 4) Manifold system 2 5) Replacement Parts for Vacuum Manifolds 200 6) Parts and Disposables for Cartridge Manifolds 200	1	0
IP-45	Sanitary Higienic Lab.	Fluorometer	1) Measuring wavelength : 220 - 750 nm or wider 2) Light source : Xenon lamp 150W or more 3) Band width : 10 and 20 nm or more 4) Sweep speed : 3,500nm/min or more	1	0
IP-46	Sanitary Higienic Lab.	Capillary electrophoresis apparatus	1) Measuring wavelength : 190 - 600 nm or wider 2) Light source : D2 lamp 3) Detector : Diode array 4) Accuracy : 1nm 5) Electrophoresis power supply : 0 - +-30kV, 0 - 300 μA, 6) Power 0 - 6W or more 7) Control : CV, CA or low power	1	0

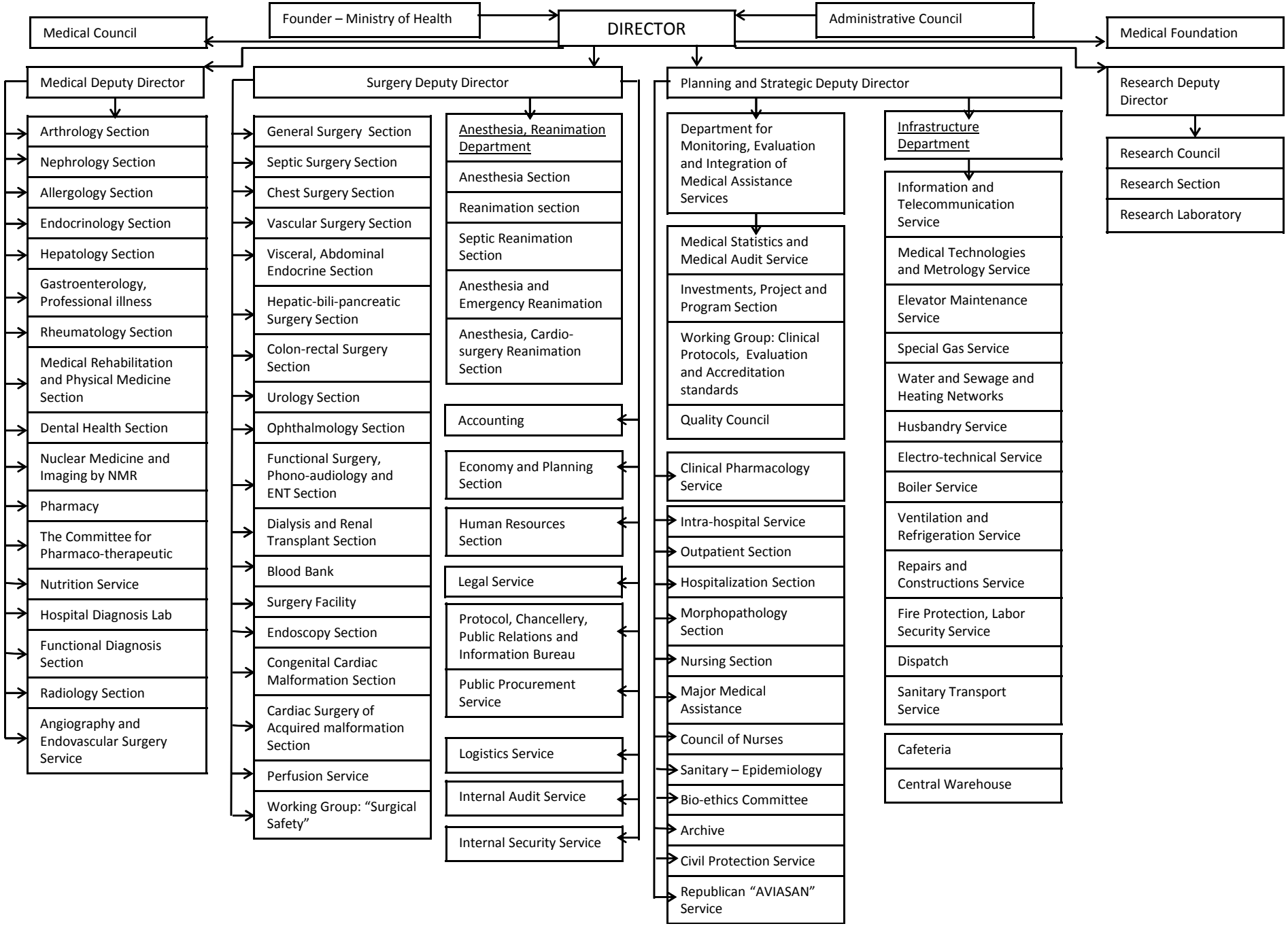
Short specification for major items (National Center for Public Health)

Item No.	Dept.	Description	Simple specifications	Q'ty	
				Central	Regional
IP-49	Sanitary Higienic Lab.	TLC densitometer	1) Application : TLC densitometry 2) Measuring method : Linear scan 3) Measuring speed : 100nm/s or more 4) Measuring mode : Absorption/Reflection, Fluoroscopy/reflection, Absorption/transmission, Fluoroscopy/transmission 5) Wavelength : 190 - 800 nm or wider 6) Size of plate : 20 x 20 cm or more	9	0
IP-54	Sanitary Higienic Lab.	Spectrophotometer UV-VIS	1) Type : UV-VIS spectrophotometer 2) Wavelength : 190 - 1100 nm or wider 3) Band width : 1nm or less 4) Measuring method : Double beam 5) Measuring method : Photometric, spectrum, quantitative, kinetics, time scan or more	4	0
IP-56	Sanitary Higienic Lab.	Incubator	1) Temperature range : Room temp. + 5 - 80 deg.C or wider 2) Chamber size : 1 x 1 x 1 m or more 3) Temperature control : PID control by microprocessor	1	0
IP-57	Sanitary Higienic Lab.	Automatic titrator with recorder	1) Titration method : Microcomputer control 2) Measuring method : Acid base (deacidification), Oxidation-reduction front, reduction, deposition, polarization, conductivity detection, pKa, COD, KF, Rahn titration or more 3) Detection rante : 0 - 14pH, 0 - 100 deg. C, -2 - 2mV or more	1	6
IP-61	Sanitary Higienic Lab.	Mercury Analyzer	1) Type of sample : Solid, Liquid and Gaseous matrices 2) Measuring method : Direct mercury analysis, Thermal Decomposition, Gold Amalgamation and Atomic Absorption 3) Detection system : Non-Dispersive Triple-Beam CVAAS 4) Measuring range : 0.002 ～25,000ng or wider 5) Detection limit : 0.002ng	1	3
IP-62	Sanitary Higienic Lab.	Laboratory Fume Hoods with external exhaust system	1) Size : 1,500W x 750D x 2,200H mm or more 2) Exhaust connection : Equipped 3) Interior and exterior : Chemical reinforcement painting 4) Front door : Tempered glass	10	0
IP-64	Control Phsical Factors Lab.	Selective Radiation Meter	1) Composition : Main unit, Three axis electric field antenna, One axis electric field antenna 2) Main unit Frequency range : 100kHz - 3GHz or wider Measuring mode : Spectrum analysis, Safety evaluation, etc.. Measuring range : -2.7 - + 23dBm Power : Battery and AC adapter 2) Three axis electric field antenna Frequency range : 27MHz - 3GHz Sensor : 3 axis Max. range : 200V/m 3) One axis electric field antenna Frequency range : 27MHz - 3GHz Sensor : 1 axis Max. range : 80V/m	1	0
IP-66	Control Phsical Factors Lab.	Sound level meter	1) Composition : Main unit, Measuring accessories, Program 2) Main unit Input : 3 channels for 3 axis Measurement frequency range : 0.5 - 5,000Hz Power : Battery 3) Measuring accessories: Accelerometer, preamplifier, cable, etc. 4) Program Whole body, Hand/arm vibration etc.	1	0

Short specification for major items (National Center for Public Health)

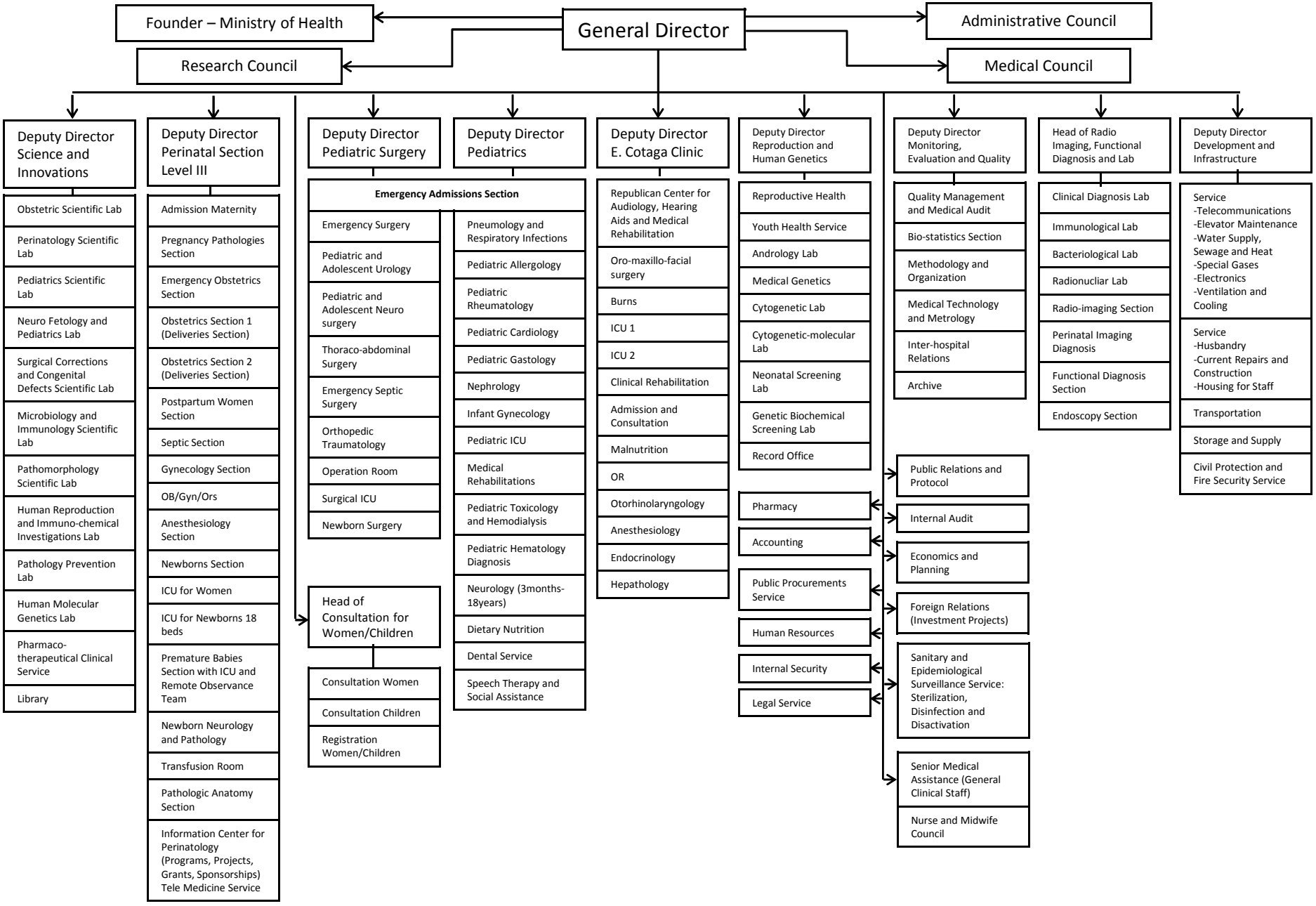
Item No.	Dept.	Description	Simple specifications	Q'ty	
				Central	Regional
IP-73	Center of Radio Protection	Alpha and beta counting spectrometry system	1) Detector : Dual phosphor scintillator for alpha and beta 2) Measurement : Planchet 3) Detector window : Aluminized 4) Shielding : 22 kg lead ring or more	1	1
IP-74	Center of Radio Protection	Gamma counting spectrometry system	1) Composition : Gamma ray detector, digital spectrometer, lead shield, analyzing software 2) Gamma ray detector LN2 free cooling system : Equipped 3) Lead shield Material : Pb 100mm or more	0	3
IP-75	Center of Radio Protection	X-Ray impulse dosimeter	1) Application : X-ray dosimeter for radiography, fluoroscopy and mammography 2) Measurement : Scatter and leakage radiation	1	3

THE ORGANIZATION CHART OF REPUBLICAN CLINICAL HOSPITAL



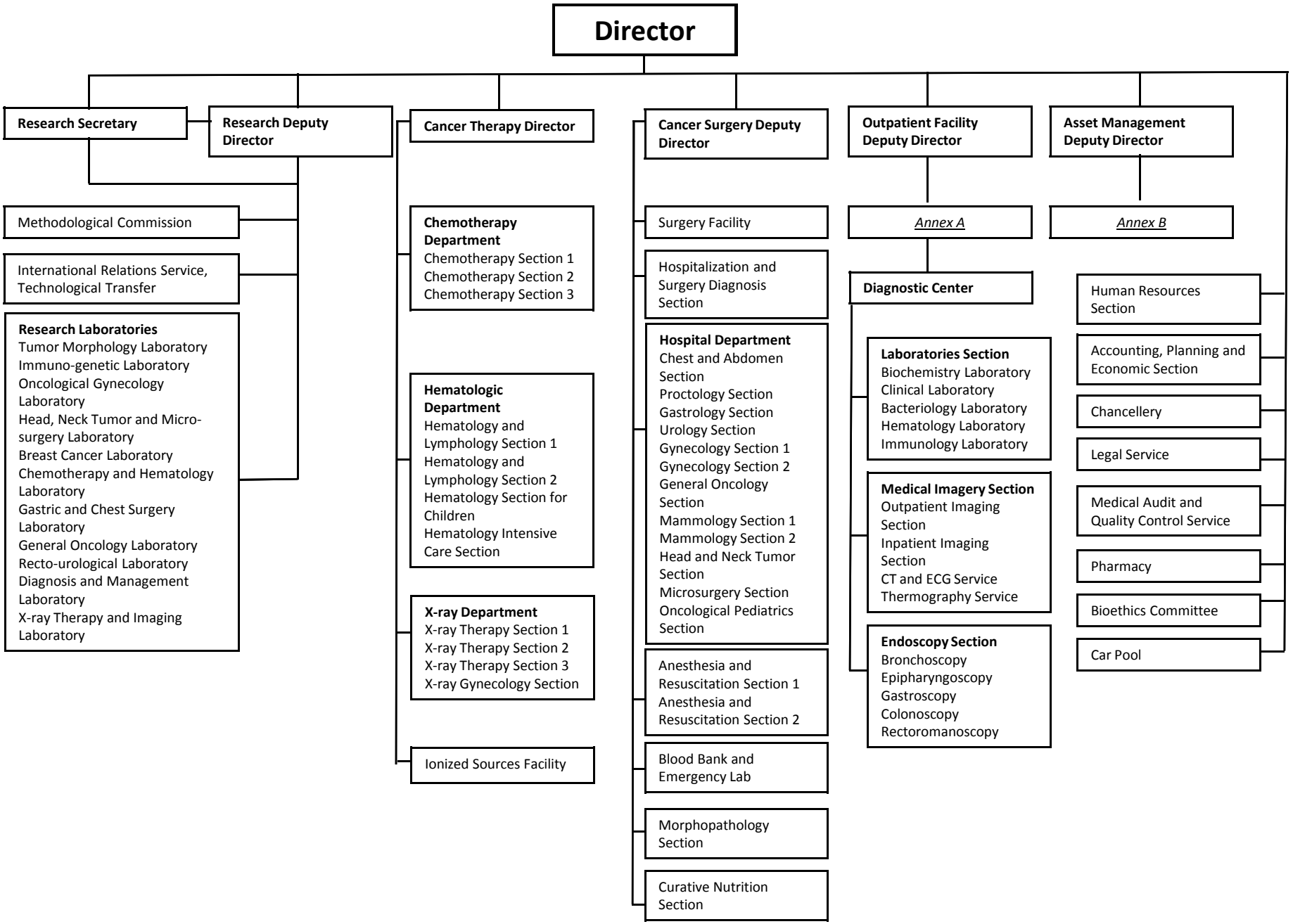
Appendix 7–1

ORGANIZATIONAL CHART OF MOTHER AND CHILD HOSPITAL



Appendix 7–2

ORGANIZATIONAL CHART OF ONCOLOGIC INSTITUTE



Deputy Director for Consulting Assistance

Annex A
To the organizational chart of Oncologic Institute

Diagnostic Consultative Center

Registration, Monitoring of Leaves

National Oncological Section
Mammologist (2)
Gynecologist (2)
General Oncologist (1)
Head and Neck Tumors (2)
Surgeon (1)
Proctologist (1)
Urologist (1)
Pulmonologist (1)
Gastrologist (2)
Crio-surgeon (1)
Hematologist (2)
Chemotherapist (1)
Ongologist – radiologist (1)
Oncologist – Pediatric (1)
Room for Medical Procedures

Oncologist Section of Chisinau Municipalty
Mammologist (2)
Gynecologist (2)
General Oncologist (1)
Head and Neck Tumors (1)
Proctologist (1)
Urologist (1)
Pulmonologist (1)
Hematologist (1)
Gastrologist (1)
Chemotherapist (1)

Diagnostic Center

Laboratories Section
Biochemistry Laboratory
Clinical Laboratory
Bacteriology Laboratory
Hematology Laboratory
Immunology Laboratory

Medical Imagery Section
Outpatient Imaging Section
Inpatient Imaging Section
CT and ECG Service
Thermography Service
Nuclear Medicine
Laboratory

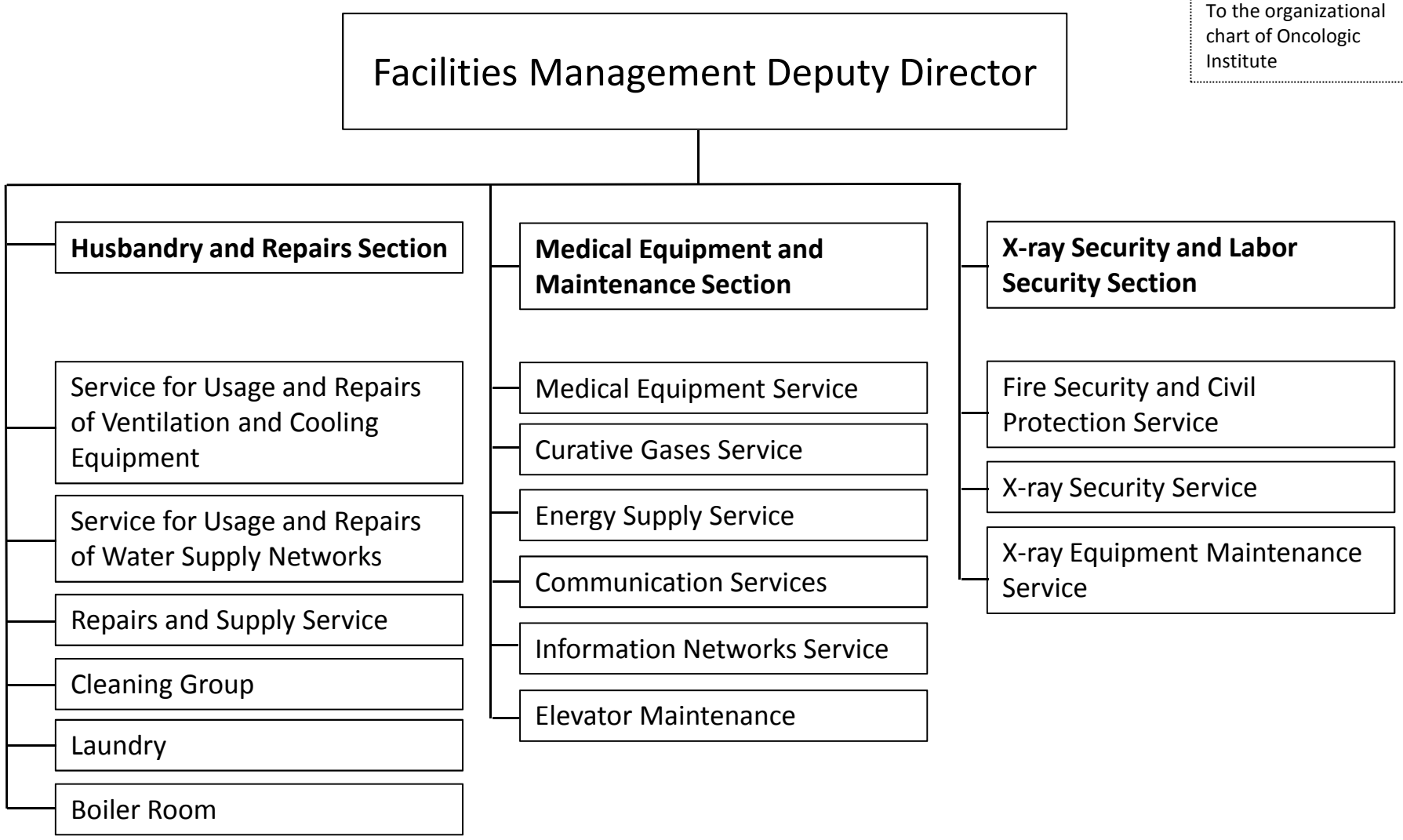
Endoscopy Section
Bronchoscopy
Epipharyngosopy
Gastroscopy
Colonoscopy
Rectoromanoscopy

Section for Monitoring, Evaluation and Integration of Medical Service (Library, Information Section)

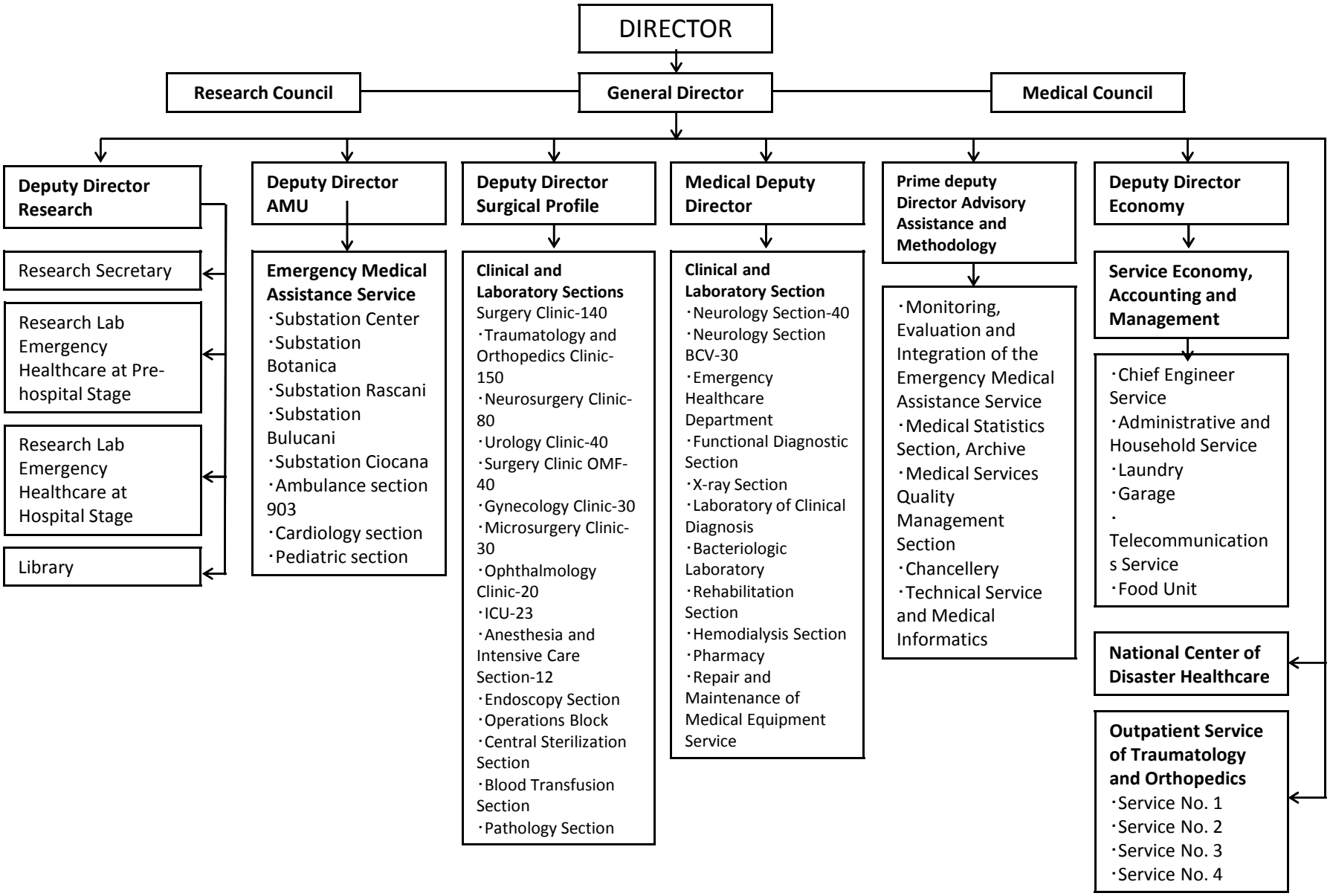
Rehabilitation and Physical Therapy Section

One Day Hospitalization Facility

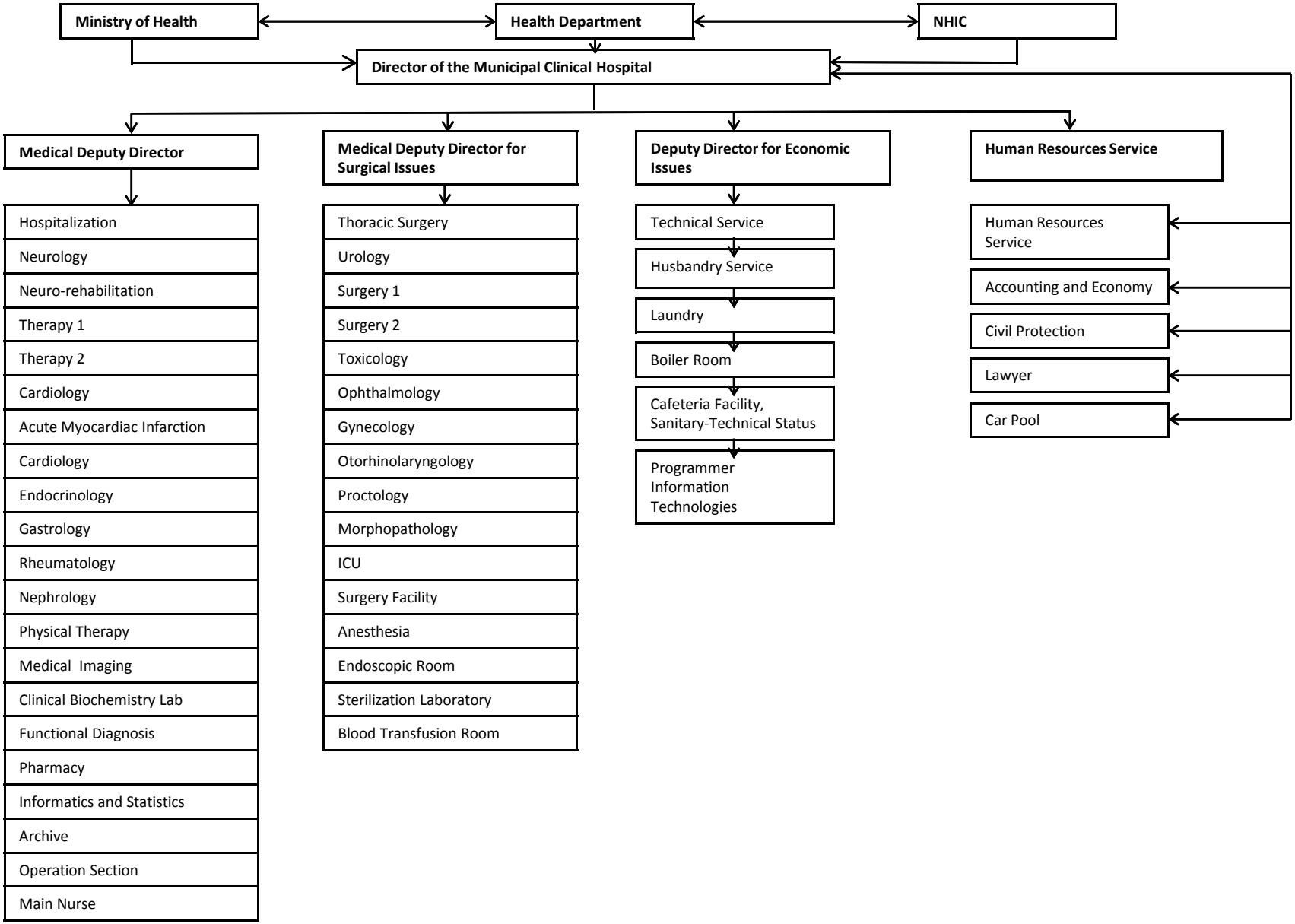
Annex B
To the organizational chart of Oncologic Institute



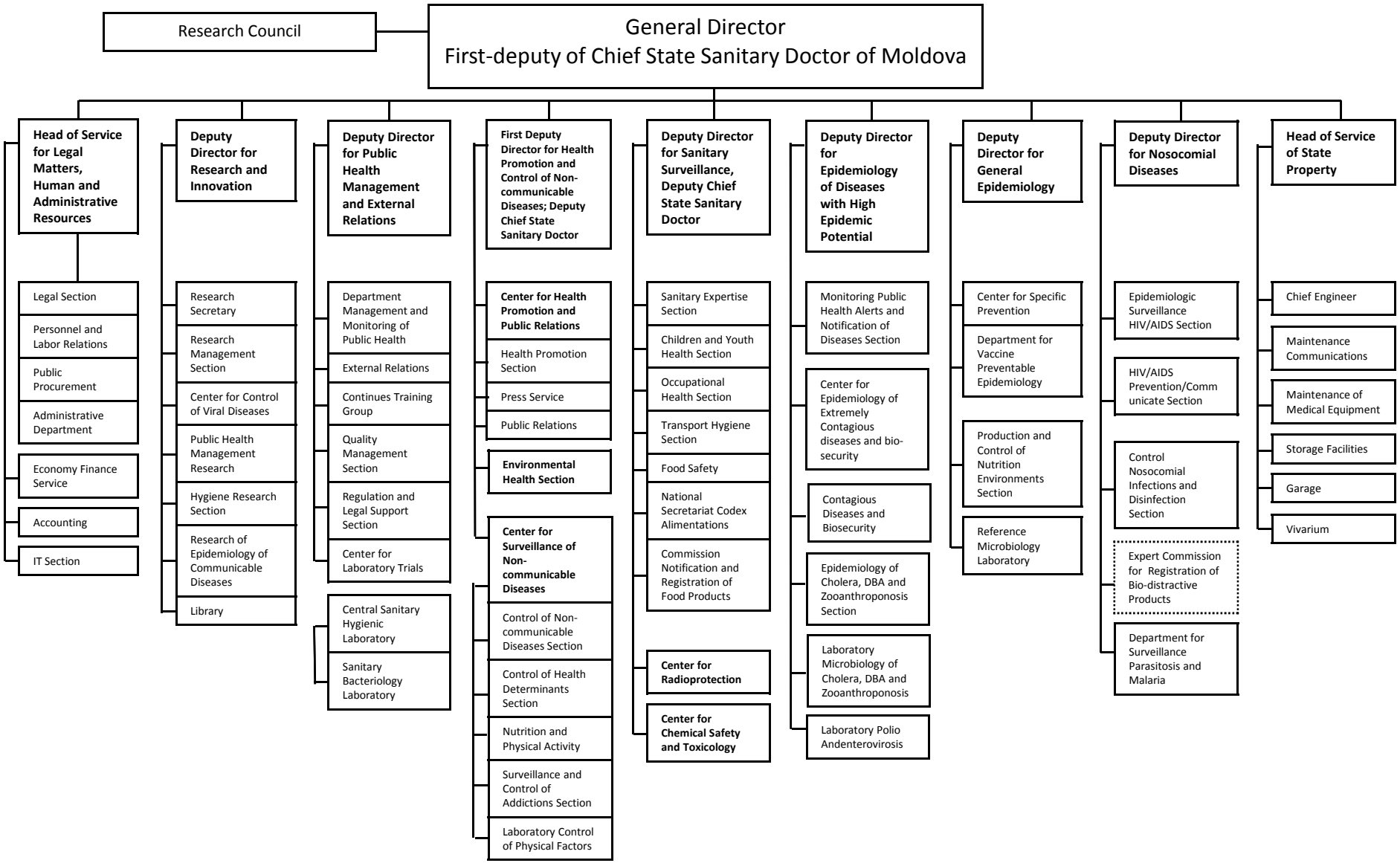
THE ORGANIZATION CHART OF NATIONAL SCIENTIFIC-PRACTICAL CENTER FOR EMERGENCY MEDICINE



ORGANIZATIONAL CHART OF MUNICIPAL CLINICAL HOSPITAL "SFANTA TREIME"



ORGANIZATIONAL CHART NATIONAL CENTER FOR PUBLIC HEALTH



Project Implementation Schedule (tentative)