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The approach of Healthcare Infrastructure  
Public-Private Partnership (PPP) in Developing  
Countries: for the equal good to Korea Interest  
Group and the Recipient Country

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SeulGi Wendy Lee

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This certifies that the dissertation of SeulGi Wendy Lee is approved.

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December 2020

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## ABSTRACT

### **Approach of Healthcare Infrastructure Public-Private Partnership (PPP) in Developing Countries: for the equal good to Korea Interest Group and the Recipient Country**

Over the past decade, Public-Private Partnerships (PPPs) have increasingly found their application in the sector of health infrastructure. The objective of this paper is to determine whether PPPs are a viable option for health infrastructure projects in developing countries. For this purpose, the author discusses and describes PPPs in general and specifies features of PPPs, which may be relevant for the healthcare sector and developing countries. In the next step, the author analyses PPP projects that are operating and projects that the author had involved and establishes key learnings from the undertaking. The combined evidence suggests that the PPP model for health infrastructure projects in developing countries can be highly risky for the countries, but also it possesses great insecurity for the participant entities. The author concludes PPP is not a better alternative to ODA in health infrastructure development in developing countries, but it should be an option. Also, the author suggests three conditions, those are prioritizing countries to build partnerships, secure evidence of partner country's commitment, testify project design through multiple steps for both the public and the private to successfully use PPP for better health delivery.

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Keywords: Public-Private Partnership, PPP, 3P, integrated, healthcare, infrastructure, finance, new hospital, developing countries, emerging markets, World Bank Group, IF

## I. Introduction

### 1.1. Significance of the Study

This paper is intended to provide fresh insights into the narrow field of health infrastructure Public-Private Partnership (PPP) projects, regardless of the prior expertise of the reader in this field. This thesis is a product of extensive literature research as well as a case study done by the writer and was developed to critically discuss and answer the following research questions:

*“Are PPPs a viable option for health infrastructure projects in developing countries?”*

This paper was conducted in two methodologies, one is a literature review and another one is a case study. The literature review was done through various international publications related to the PPP theme, among which the experience of PPP of international organizations, international development banks, health aides, and private sectors. And since there are limitations of actual operating PPP hospitals in developing countries, the focused case was the Queen 'Mamohato Hospital in Lesotho. The case study was focused on two cases that the writer has experienced, which is Kyrgyzstan State Medical Academy PPP Hospital Development (“KSMA Hospital Project”) and India-Korea Rajasthan PPP Medical Cluster Development. Although both are still on-going projects (KSMA has finished its feasibility study, Rajasthan Medical Cluster Project finished its Master Plan Study), the experiences of being involved in those two projects have left a substantial amount of learning about the Healthcare PPP Projects in developing countries.

## 1.2. Objective of the Study

The world is facing multiple levels of healthcare challenges these days, aging population, global pandemic, non-communicable disease, and still on-going communicable diseases in the low to middle-income countries. The most recent pandemic, COVID-19, resurfaced the severity of healthcare infrastructure shortage in developing countries and developed countries. With the inevitable less attention of developing countries' government, various health issues are urging the governments to solve the insufficiency of health infrastructure that is directly affecting the quality of health.

A health system is composed of various elements such as infrastructure, human resources, medical equipment, data system, financial systems, etc. Poor and inadequate infrastructure generally leads to poor quality of service, which in turn not only wastes resources but is positively dangerous to the health and welfare of the patients and the community at large. The poor suffer more if government services are not functional or are of poor quality as they do not have any other choice..

### 1.2.1. Rapid growth of medical unmet needs

Globally, there were 703 million older persons aged 65 or over in 2019. Eastern and South-Eastern Asia were home to the largest number of the world's older population (260 million), followed by Europe and Northern American (over 200 million) (Table 1). World Health Organization (WHO) predicted between 2015 and 2050, the proportion of the world's population over 60 years will nearly double from 12% to 22%. Also, by 2020, the number of people aged 60 years and older will outnumber children younger than 5 years. But the most critical issue for developing countries is that in 2050, 80% of older people will be living in low- and middle-income countries.

*Table 1. Number of persons aged 65 years or over by geographic region, 2019 and 2050*

<b>Region</b>	<b>Number of persons aged 65 or over in 2019 (million)</b>	<b>Number of persons aged 65 or over in 2050 (millions)</b>	<b>Percentage change between 2019 and 2050</b>
<b>World</b>	<b>702.9</b>	<b>1548.9</b>	<b>120</b>
Sub-Saharan Africa	31.9	101.4	218
Northern Africa and Western Asia	29.4	95.8	226
Central and Southern Asia	119.0	328.1	176
Eastern and South-Eastern Asia	260.6	572.5	120
Latin America and the Caribbean	56.4	144.6	156
Australia and New Zealand	4.8	8.8	84
Oceania, excluding Australia and New Zealand	0.5	1.5	190
Europe and Northern America	200.4	296.2	48

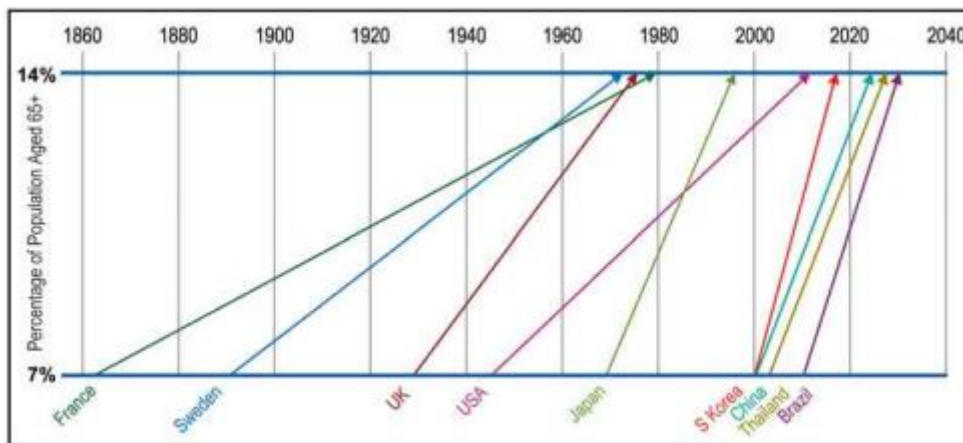
Source: United Nations, 2019.

The aging population has a huge impact on global and regional health. Especially the growing number of older people in low- and middle-income countries is expected to bring an enormous burden of disease to those countries. The reality of the increasing number of older people in developed countries is already showing a huge rise in health expenditure to the government and the people. Most developed countries are facing challenges with their health expenditure raise and are forced to find another way to deal with the issue.

Most developed nations have had decades to adjust to their changing age structures. It took more than 100 years for the share of France's population aged 65 or older to rise from 7 percent to 14 percent. In contrast, many less developed countries are experiencing a rapid increase in the number and percentage of older people, often with a single generation. (Figure 1) For example, the same demographic aging that unfolded over more

than a century in France will occur in just two decades in Brazil. Developing countries are expected to adapt quickly to this new reality.

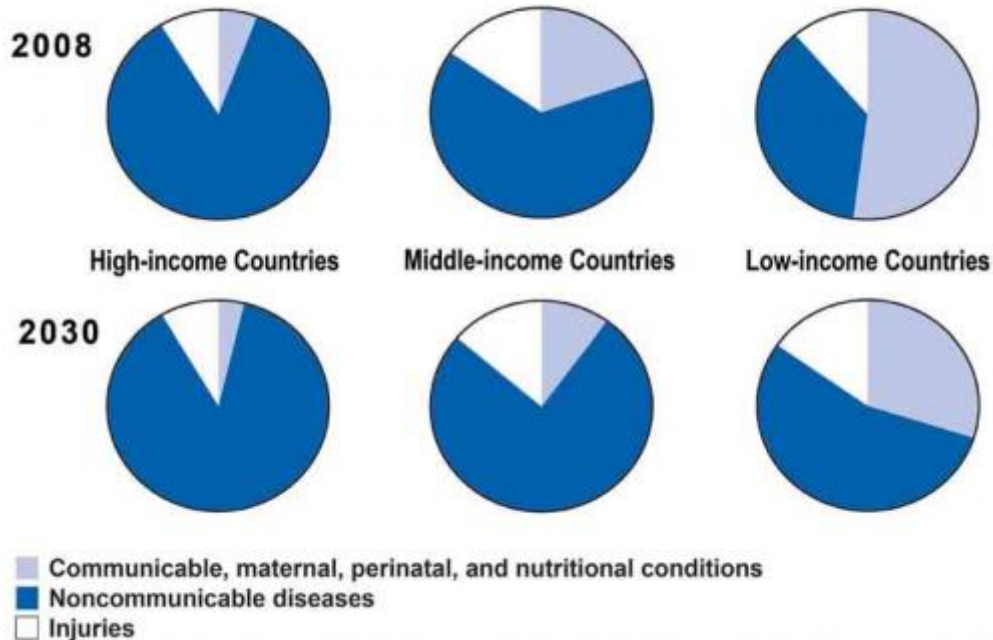
Figure 1. The Speed of Population Aging



Source: Kinsella K, He W., 2009

The transition from high to low mortality and fertility that accompanies socioeconomic development has also meant a shift in the leading causes of disease and death. Although many developing countries still experience high child mortality from infectious and parasitic diseases, one of the major epidemiologic trends of the current century is the rise of chronic and degenerative diseases in countries throughout the world—regardless of income level. Especially most developing countries will soon face both communicable disease and non-communicable disease, which are diseases in low-income countries and diseases in developed countries.

Figure 2. The increasing burden of chronic noncommunicable disease: 2008 and 2030



Source: World Health Organization

### 1.2.2. Existing Threat of infectious disease in developing countries

The COVID-19 crisis is showed the world how the shortage of health infrastructure can lead to. Countries have chosen to treat more survivable patients instead of treating all the patients because of the shortage of health infrastructure, medical professionals, medical equipment, etc. At least patients in developed countries can get the chance to be treated, but patients in developing countries are facing death without any treatment in their home, even inevitably spreading the virus to their loved ones.

The pandemic of an infectious disease is unstoppable and unpredictable. Throughout human history, there have been several pandemics of disease such as smallpox and tuberculosis. The most fatal pandemic in recorded history was the Black Death, which is also known as the plague, which killed an estimated 75-200 million people in the 14th century. Every time pandemic hits the world, the most fatal ones are the ones in developing countries, which lack every resource one can think of about healthcare.



### **1.2.3. Difficulty of developing health infrastructure for developing countries.**

According to the WHO, under-resourced national health systems lack both the equipment and health workers needed to respond to the unfolding public health emergency. Home to the world's poorest (90% by 2030) and many fragile countries, the continent has far fewer doctors, hospital beds, and ventilators per capita than any other region, not to mention the profound disconnect between metropolitan capitals, intermediary agglomerations, and rural areas, in terms of the distribution of health infrastructure. As low-income countries become low-middle income countries, the governments' priorities are less about health. Developing countries' health systems and their capacity suffered from severe cuts in social spending (notably in education and health sectors) during the structural adjustment programs. To keep the drive of economic growth, most developing countries tend to choose other infrastructure development, such as road, energy, port, airport, etc., which pushes the most medical disadvantages to the edge of their lives.

Table 2. Health expenditure (2017, current \$)<sup>1</sup>

Item	Population (%)	GDP (%)	Per capita GDP (\$)	Current health expenditure (% of GDP)	Health expenditure per capita (\$)	External resources for health (% health expenditure)	Proportion of health expenditure public/private/ out of pocket (%) <sup>2</sup>
<b>World</b>	100%	100%	10,817	9.9	1061	0.2	60/40/18
<b>By Income Group</b>							
<b>High income</b>	16%	63%	41,971	12.5	5284	0.0	62/38/14
<b>Upper middle income</b>	38%	29%	8,365	5.7	460	0.2	55/44/33
<b>Lower middle income</b>	38%	7%	2,035	4.0	81	3.4	34/63/56
<b>Low income</b>	8%	1%	780	5.7	45	22.3	20/58/51
<b>By geographic region</b>							
<b>East Asia &amp; Pacific</b>	31%	30%	10,468	6.6	671	0.1	67/33/26
<b>Europe &amp; Central Asia</b>	12%	27%	23,597	9.3	2192	0.0	73/27/18
<b>Latin America &amp; Caribbean</b>	8%	7%	9,433	8.0	685	0.3	52/48/28
<b>Middle East &amp; North Africa</b>	6%	4%	7,411	5.7	459	0.7	58/42/34
<b>North America</b>	5%	26%	58,468	16.6	9691	-	51/49/11
<b>South Asia</b>	24%	4%	1,867	3.5	64	1.8	27/71/62
<b>Sub-Saharan Africa</b>	14%	2%	1,561	5.1	84	11.2	36/53/36

Note: GDP = gross domestic product.

Source: The World Bank, World Development Indicators

<sup>1</sup> All country categories and data from the World Bank World Development Indicators database.

<sup>2</sup> Out-of-pocket expenditure is a subset of private expenditure; it is shown here as a proportion of total health expenditure

The shift of epidemiologic trends leads to increase needs for tertiary care health infrastructures, which are general hospitals. Most developing countries are in the urgent of building large new health infrastructures or rebuild existing old hospitals. The creation of large healthcare infrastructure facilities involves complex construction projects. These projects pose specific challenges during the planning, construction, and management of projects. Hospitals are characterized by multiple building components and systems, distinct stakeholders' needs, continuous technological innovations, specific functions, and particular building codes and regulations to comply with.

Furthermore, operating large scales hospitals in developing countries often encounter challenges with acquiring sufficient medical professionals. Training qualified medical personnel require another level of endeavor from the governmental level. It requires an education facility, research center, qualified medical professors, training equipment, etc. Most developing countries are aiming to develop more medical colleges, including nurses, paramedics, medical engineers, etc., to gain the sustainability of medical personnel in the country..

## **II. Development Assistance for Health: ODA, DAH**

### **2.1. Trend of current development assistance for health**

Developing healthcare infrastructure requires a huge endeavor. Creating a health infrastructure, especially tertiary care hospital or general hospital, requires multiple stages in planning, demand study, medical planning, medical equipment planning, operation planning, hospital architectural design, expertise in hospital construction, financial planning, etc. All these stages require financial support, but also a long time period of sustainable and stable focus from the developer and the government.

Development assistance to health is done through various sources. Governments, non-governmental organizations, private sectors, personnel, etc., are holding development

assistance’s promise which is alleviating the death and suffering of impoverished children, women, and men from readily preventable and treatable conditions and to support global economic development, demographic sustainability, and political stability. Most well-known development assistances were done through ODA from OECD and DAH from IHME. The most authoritative figure available is the Organization for Economic Cooperation and Development (OECD)’s estimate of official development assistance (ODA), which includes only government contributions from OECD members.

Suerie Moon has said “a comparison with DAH is necessarily imperfect since DAH includes both public and private sources from both OECD and non-OECD countries. Total ODA increased by 77% from 2000 to 2014 (OECD, 2015), while DAH grew by 332% in the same time period. Looking only at health ODA, the proportion of health within total ODA also grew over the same period, from less than 2% in 1990 to 8% in 2000 and to 17% in 2014 (OECD, 2015; IHME, 2016). In short, development assistance targeted at health has grown faster than development assistance overall.” (Moon S, 2017) As DAH’s role and financial assistance are growing with faster speed, it can be seen as the private philanthropists and corporate donations are taking more percentages in health aid.

*Table 3. Health Development Assistance Methods*

<b>Item</b>	<b>Official Development Assistance (ODA)</b>	<b>Development Assistance for Health (DAH)</b>
Organization	Organization of Economic Co-operation and Development (OECD)	Institute for Health Metrics and Evaluation (IHME)
Established Year	1969	2009
Members	30 countries	Multiple
Funding Sources	<ul style="list-style-type: none"> <li>• Provided by official agencies, including state and local governments, or by their executive agencies</li> </ul>	<ul style="list-style-type: none"> <li>• National Treasuries</li> <li>• Debt repayments to international financial institutions</li> </ul>

	<ul style="list-style-type: none"> <li>• Concessional (i.e. grants and soft loans) and administered with the promotion of the economic development and welfare of developing countries as main objective</li> </ul>	<ul style="list-style-type: none"> <li>• Private philanthropists</li> <li>• Corporate donations</li> </ul>
Channels of Assistance	<ul style="list-style-type: none"> <li>• Bilateral Aid: transactions directly with partners in developing countries (mostly developing country governments, but also local or international NGOs)</li> <li>• Multilateral Aid: UN Family: WHO, PAHO, UNICEF, UNFPA, UNDP, development banks, AFDB, ADB, IADB, World Bank, EC.</li> </ul>	<ul style="list-style-type: none"> <li>• Bilateral development assistance agencies</li> <li>• The Europe Commission</li> <li>• UN Agencies: UNFPA, UNAIDS, WHO, UNICEF, PAHO</li> <li>• The World Bank and other regional development banks</li> <li>• The Global Fund to fight AIDS, TB and Malaria</li> <li>• The GAVI Alliance</li> <li>• Foundations</li> <li>• NGOs</li> </ul>
Implementing Institutions	<ul style="list-style-type: none"> <li>• Governments of Recipient Countries</li> </ul>	<ul style="list-style-type: none"> <li>• Governmental Programs</li> <li>• National Ministries of Health</li> <li>• National Disease Control Programs</li> <li>• Non-governmental programs</li> <li>• National NGOs</li> <li>• Private sector contractors</li> <li>• Universities and research institutions</li> </ul>

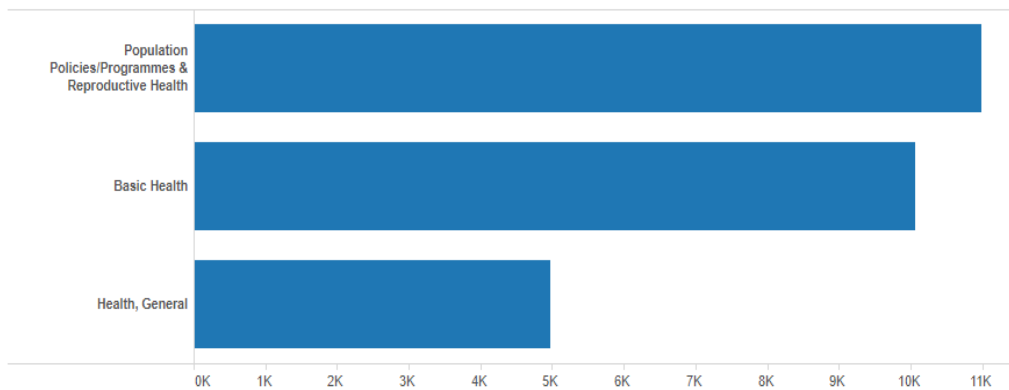
### 2.1.1. Official Development Assistance, OECD

Official development assistance (ODA) is defined by the OECD Development Assistance Committee (DAC) as government aid that promotes and specifically targets the economic development and welfare of developing countries. The DAC adopted ODA as the “gold standard” of foreign aid in 1969 and it remains the main source of financing for development aid (ODA, OECD). In 2019, ODA by member countries of the DAC totaled USD 152.8 billion, representing 0.30% of their combined. This comprised USD 149.4 billion in the form of grants, loans to sovereign entities and contributions to

multilateral institutions (calculated on a grant-equivalent basis); USD 1.9 billion to development-oriented private sector instrument (PSI) vehicles, USD 1.4 billion in the form of net loans and equities to private companies operating in ODA-eligible countries and USD 0.1 billion of debt relief. Total ODA in 2019 rose by 1.4% in real terms compared to 2018, as bilateral aid to low-income countries rose. Bilateral sovereign loans on a grant equivalent basis increased by 5.7% in real terms compared to 2018 (OECD, 2020).

ODA particularly devotes to health through “Aid to Health”, which is composed of aid to health- general and basic health and population policies/programs and reproductive health- includes HIV/AIDS. (Figure 3)

*Figure 3. ODA Health-related aid by sector, commitments, USD Million, constant 2016 prices for all*



Source: Aid to Health, OECD

‘Health and general’ of the ODA program consists of health policy and administrative management, medical education/training, medical research, and medical services. ‘Basic health’ consists of basic health care, basic health infrastructure, basic nutrition, infectious disease control, health education, malaria control, tuberculosis control, health personnel development. Lastly, ‘Population policies/programs and

reproductive health' is about population policy and administrative management, population policy and administrative management, family planning, STD control including HIV/AIDS, and personnel development for population and reproductive health. (Table 4)

*Table 4. OECD, ODA, Aid to Health, Related reporting codes and descriptions*

<b>Codes</b>	<b>Description</b>	<b>Clarification/Additional notes on coverage</b>
<b>120</b>	<b>Health</b>	
<b>121</b>	<b>Health, general</b>	
12110	Health policy and administrative management	Health sector policy, planning and programmes; aid to health ministries, public health administration; institution capacity building and advice; medical insurance programmes; unspecified health activities.
12181	Medical education/training	Medical education and training for tertiary level services.
12182	Medical research	General medical research (excluding basic health research).
12191	Medical services	Laboratories, specialized clinics and hospitals (including equipment and supplies); ambulances; dental services; mental health care; medical rehabilitation; control of non-infectious diseases; drug and substance abuse control [excluding narcotics traffic control (16063)].
<b>122</b>	<b>Basic health</b>	
12220	Basic health care	Basic and primary health care programmes; paramedical and nursing care programmes; supply of drugs, medicines and vaccines related to basic health care.
12230	Basic health infrastructure	District-level hospitals, clinics and dispensaries and related medical equipment; excluding specialized hospitals and clinics (12191).
12240	Basic nutrition	Direct feeding programmes (maternal feeding, breastfeeding and weaning foods, child feeding, school feeding); determination of micro-nutrient deficiencies; provision of vitamin A, iodine, iron etc.; monitoring of nutritional status; nutrition and food hygiene education; household food security.

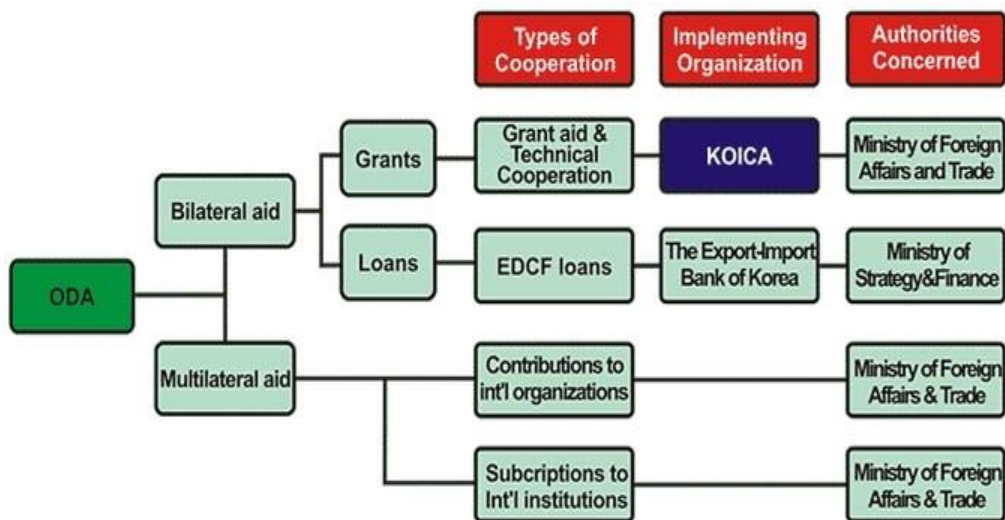
12250	Infectious disease control	Immunization; prevention and control of infectious and parasite diseases, except malaria (12262), tuberculosis (12263), HIV/AIDS and other STDs (13040). It includes diarrheal diseases, vector-borne diseases (e.g. river blindness and guinea worm), viral diseases, mycosis, helminthiasis, zoonosis, diseases by other bacteria and viruses, pediculosis, etc.
12261	Health education	Information, education and training of the population for improving health knowledge and practices; public health and awareness campaigns.
12262	Malaria control	Prevention and control of malaria.
12263	Tuberculosis control	Immunization, prevention and control of tuberculosis.
12281	Health personnel development	Training of health staff for basic health care services.
<b>130</b>	<b>POPULATION POLICIES/PROGRAMMES AND REPRODUCTIVE HEALTH</b>	
13010	Population policy and administrative management	Population/development policies; census work, vital registration; migration data; demographic research/analysis; reproductive health research; unspecified population activities.
13020	Population policy and administrative management	Promotion of reproductive health; prenatal and postnatal care including delivery; prevention and treatment of infertility; prevention and management of consequences of abortion; safe motherhood activities.
13030	Family planning	Family planning services including counselling; information, education and communication (IEC) activities; delivery of contraceptives; capacity building and training.
13040	STD control including HIV/AIDS	All activities related to sexually transmitted diseases and HIV/AIDS control e.g. information, education and communication; testing; prevention; treatment, care.
13081	Personnel development for population and reproductive health	Education and training of health staff for population and reproductive health care services.

Source: Aid to Health, OECD



ODA is broadly divided into bilateral aid, which the assistance is given directly to the recipient/ developing countries, and multilateral aid, which the assistance is provided through an international organization. And Bilateral aid includes grants and loans that are concessional and contain a grant element of at least 25 percent. Korean Government has Korea International Cooperation Agency (KOICA), which was established in 1991 to deliver grant aid programs in bilateral aid. And loans are delivered through the Economic Development Cooperation Fund (EDCF) by The Export-Import Bank of Korea (KEXIM).

Figure 4. Flow of Official Development Assistance of Korean Government



Source: KOICA

### 2.1.2. Development Assistance for Health (DAH)

Development assistance for health, a term introduced by the Institute for Health Metrics and Evaluation (IHME) in 2009 that quickly became commonly used in the global health community. DAH defined as the financial and in-kind contributions transferred through major development agencies to low- and middle-income countries for maintaining or improving health has held steady in annual growth rate since 2011. According to the IHME latest Financing Global Health 2018 report, DAH has

experienced a 0.3% drop in the annual growth rate over the most recent 5 years (2013–2018).

From the early 1990s up until 2000, about half of the DAH fund was allocated through bilateral channels, and most of the remaining funds flowed through multilateral institutions such as WHO, UNICEF, and international development banks. But since the beginning of the 21st century, major new donors have emerged. The private philanthropies, including Bill & Melinda Gates Foundation, The Clinton Foundation, Bloomberg Philanthropies gained their influence in health development assistance.

IHME is an independent global health research organization at the University of Washington that provides a rigorous and comparable measurement of the world’s most important health problems and evaluates the strategies used to address them. Although governments remain by far the largest source of DAH, private sources of funding (including foundations, NGOs, and corporations) are growing its importance with 17.3% in 2014. The largest health issue that DAH is focusing on is HIV/AIDS, followed by maternal, newborn, and child health. From the following table, it can be realized that DAH has been prioritizing communicable diseases over the non-communicable disease.

*Table 5. Top Sources, Channels, and Health Focus Areas of Development Assistance for Health (DAH), 2018 (Dieleman et, al., 2019)*

<b>Leading Sources of DAH</b>	<b>Amount, 2018 \$, In Billions</b>	<b>Primary Channels of DAH</b>	<b>Amount, 2018 \$, In Billions</b>	<b>Principle Program(s) of DAH</b>	<b>Amount, 2018 \$, In Billions</b>
United States	13.15	Nongovernmental Organizations	10.78	Health system strengthening, excluding pandemic preparedness and human	3.33

				resources for health	
United Kingdom	3.28	US Bilateral	6.75	HIV/AIDS treatment	3.12
Bill & Melinda Gates Foundation	3.24	Global Fund	3.19	Reproductive, maternal, newborn, and child health, excluding vaccines, nutrition, family planning, and health system strengthening	3.12
Germany	1.65	World Health Organization	2.57	Vaccines	2.82
Japan	1.19	World Bank	2.30	Human Resources for Health	1.89
Canada	0.91	Bill & Melinda Gates Foundation	2.18	Reproductive, maternal, newborn, and child health system strengthening	1.68
France	0.76	United Nations Children's Fund (UNICEF)	1.90	Other infectious diseases, excluding health system strengthening, Ebola virus, and Zika virus funding	1.55
Sweden	0.70	Gavi, Vaccine Alliance	1.52	Maternal health, excluding family planning and	1.44

				health system strengthening	
Netherlands	0.70	UK bilateral	0.83	HIV/AIDS prevention	1.43
Norway	0.67	United Nations Population Fund (UNFPA)	0.83	Family planning	1.26

Source: Journal of the American Medical Association

## 2.2. Limitations of current health development assistance

Over the past years, an increased concern for aid effectiveness has led donors to question whether parallel approaches have supported system development for recipients, although there is consensus that unintended consequences of development assistances are complex and many needs to be done to ensure that aids do not harm health financing systems in the countries it is intending to help.

Most development aids trend represents a diagonal approach to health system strengthening that grows health system capacity for a specific task, rather than investing in broader strengthening. Still, concerns remain that without meaning investments in developing primary healthcare systems and strengthening key health system pillars, health gains are less likely to be sustained. Key health system pillars include health information systems, capacity for training health professionals, domestic financing systems, health system surveillance, public health programs, and leadership and governance.

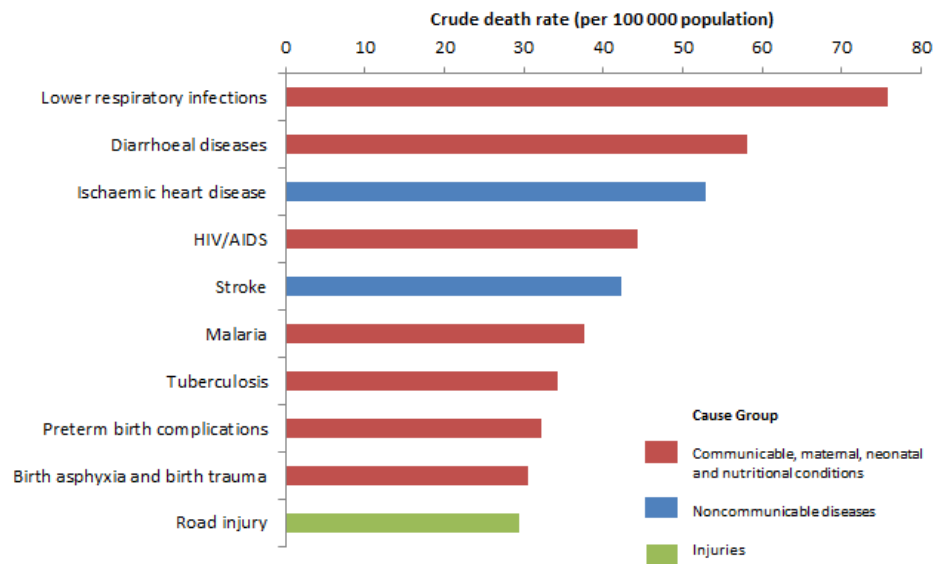
### 2.2.1. Health Development Assistance’s primarily focus in promoting public health

The World Bank assigns the world’s economies to four income groups – low, low-middle, upper-middle, and high-income countries. In 2019, there were 31 countries classified as low income, less than half the number in 2001. Developing countries have increased their share of the global economy by growing faster than rich countries, on

average 6.8 percent per year compared to only 1.8 percent for high-income economies over the 2000 to 2010 period. But the difference between rich and poor remains large. The average income of all high-income was 38,658 in 2010, while that of middle-income economies was \$3,764 and of low-income economies was \$510. (World Bank Group)

ODA and DAH have long been focusing on assisting the public health development of developing countries. Since developing countries were primarily suffering from communicable disease, most aid development assistances were focused on public health development. It is reasonable as we can see from the following Figure 5 which shows the top 10 causes of deaths in low-income countries in 2016.

Figure 5. Top 10 causes of deaths in low-income countries in 2016



Source: World Health Organization, 2018

In 2020, there are 22 countries that are categorized as low-income countries, 50 countries categorized as low-middle income countries. Once used to be low-income countries are growing their economies faster than before and more countries converted

themselves to low-middle and upper-middle countries. This shows the change of epidemiological trend of them. (Figure 6,7)

Figure 6. Top 10 causes of deaths in lower-middle-income countries in 2016

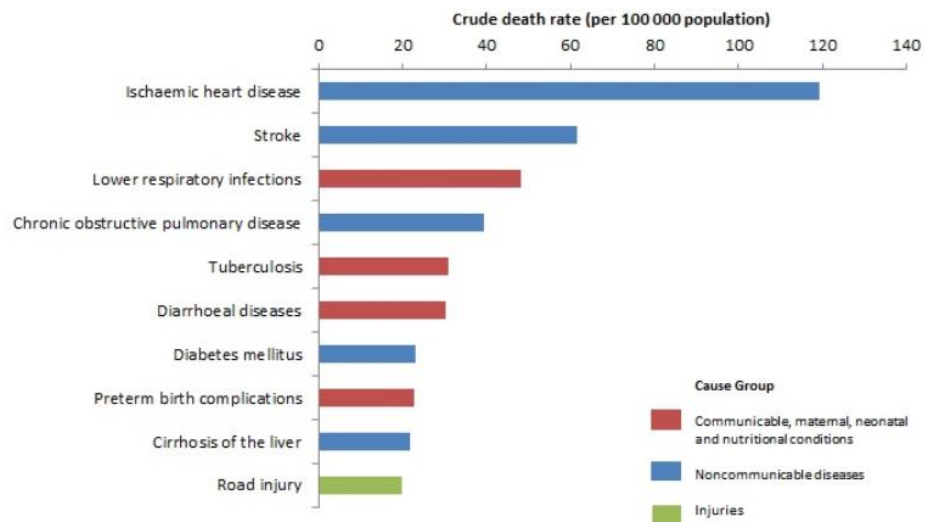
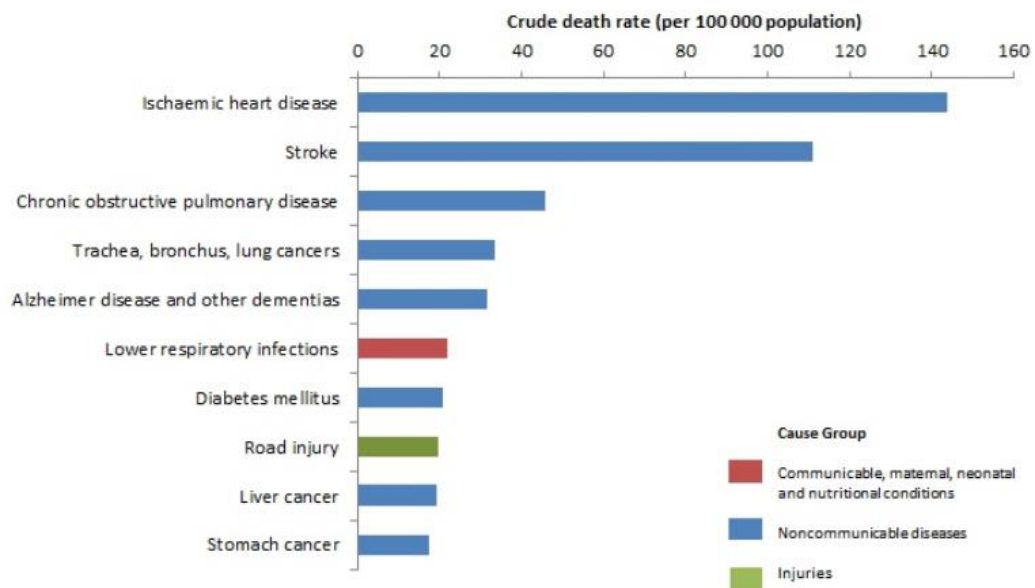


Figure 7. Top 10 causes of deaths in upper-middle-income countries in 2016



Source: World Health Organization, 2018

The speed of low-income countries converting themselves to upper levels, and epidemiological trends' changes between each level of income countries, do force us to consider what becomes more essential for non-communicable diseases.

World Health Organization has stated that a strong non-communicable disease control strategy is required to include estimates of resource requirements for achieving population coverage and outcome targets. The resource requirements include financial resources, human resources, health infrastructure, and technology (WHO, 2014). But as mentioned in the previous chapter, most of ODA and DAH has been focusing on projects/activities on primary healthcare. Some people do suggest that non-communicable disease is also preventable because their common risk factors are tobacco use, physical inactivity, unhealthy diet, harmful use of alcohol, and environmental factors (outdoor/indoor air pollution). But it is well-known that those factors aren't easy to control. These factors are not even being controlled in high-income countries, because of the conflict of morality and independent decisions of human nature. Therefore, facilities to provide health services are becoming essential for treating non-communicable diseases. But since current development assistance to health is mainly focusing on public health, the importance of healthcare infrastructure is being neglected.

South Korea, which is one of the high-income countries, is well-known for its healthcare services and the aging population. Also, it is a country that has become a high-income country from a low-income country in a short period. South Korea's health expenditure to GDP in 2019 made an entry to 8 percent for the first time. Last year's health expenditure to GDP rose by 0.5 percent to 8.1 from 7.6 percent in 2017, which is still lower than the OECD average (8.8%) but recorded the highest increase rate over the past 10 years. One of the reasons for the rapid increase in health expenditure, reflecting on a variety of figures, is assumed to be an increase in health insurance expenses for the

cost of hospitalization and examination mainly in the superior general hospital and general hospitals.

*Table 6. Health care services provisioning, utilization, and average costs in South Korea in 2001 and 2015*

Item	2001	2015	% change
Physicians (per 1000 population)	1.4	2.3	64%
Hospital beds (per 1000 population)	4.5	11.5	156%
MRI machines (per million population)	6.8	26.3	287%
CT scanners (per million population)	27.3	37.0	36%
Physician visits (per capita per year)	10.6	16.0	51%
Hospital admission rate (per 1000 population per year)	79.9	133.8	67%
Average NHI expenses for a physician visit (US dollars) *	21.6	25.3	17%
Average NHI expenses for a hospital admission (US dollars) *	762.8	1,338.4	75%

\* The annual average exchange rates of KRW/USD were 733.4 in 1991, 1,291.0 in 2001, and 1,131.3 in 2015; NTD/USD were 26.8 in 1991, 33.8 in 2001, and 31.9 in 2015.

Source: National Health and Nutrition Surveys Examination Surveys (KNHANES)

### **2.2.2. Bureaucracy of providing countries that dilute the purpose of aid in health**

Giles Carbonnier from her report “Official Development assistance once more under fire from critics” has mentioned that ODA is seen by some as inefficient and by others as a waste of taxpayers’ money. Several authors have argued that aid can have negative impacts and act as a brake on development (Monga 2009; Moyo 2009; Nwokeabia 2009; Tandon 2008). Cyriaque Rene Sobtafo Nguetack had listed five bottlenecks in the influence of development assistance on health indicators through assessing the influence



of ODA on selected health development indicators in Uganda between 2005 and 2013 (Nguefack, 2020). Those were “(a) poor governance and accountability framework in the country, (b) ineffective supply chain of health commodities, (c) negative cultural beliefs, (d) insufficient government funding to health care, and (e) insufficient alignment of development assistance to the National Development Plan and noncompliance with the Paris Declaration on Aid Effectiveness.” Also, allocations by donors might be guided by many additional factors, including geographical proximity, historical colonial connections, strategic political interests, and trade-related considerations, particularly for bilateral aid (Berthélemy, 2006; Vázquez, 2015).

As we understand that ODA is mostly happening bilaterally between the two countries. As most of us are aware, most governments involved projects are inevitable with its bureaucracy. Few papers are pointing out the same, Yoon-Ho Kim from his paper argues that Japan’s ODA policy making, which has assumed that the Diet or Prime Minister is a key ODA decision-maker and argues that Japan’s motive in increasing foreign aid spending was subject to the politicians’ interests. Contrary to this position, the author argues that the primary ODA decision-making power in Japan has resided not with the politicians but with the bureaucracy (Kim, 2011). Also, development aid has been seen as a tool of diplomacy for a long time ago. Most of the countries set their priorities every year about which continents/countries and in which category of aid they prefer to support. And since ODA or DAH is based on donors’ financial participation, it is inevitable to somehow reflect major countries’ preferences. Research on the determinants of foreign aid-giving suggests that donors focus on diplomatic rather than development considerations when they choose where to disburse aid.

Several non-governmental organizations are working in the field of development cooperation have been very vocal in their critiques of aid, and this even though they are usually among the most ardent supporters of ODA. Ever since the 2002 Monterrey conference on development financing there has been increasing opposition to the practice

utilized by members of the OECD's Development Assistance Committee (DAC) whereby they include in ODA statistics on expenditure that does nothing to contribute towards the fight against poverty or to improve the well-being of populations in the field. According to Action Aid International (2005), two-thirds of ODA provided in 2003 was "phantom aid". Indeed, 20% of aid funding was invested in ineffective technical cooperation whose inflated costs benefited primarily consultants from donor countries, while 14% of ODA went to service foreign debt repayments. For the organization, the latter was little more than a "journal entry" in an accounting exercise. Still, according to the organization, ODA is often inflated by excessive transaction costs and costs of administering aid coordination. Finally, a growing part of ODA is being used to fund the costs of hosting asylum-seekers in industrialized nations during the first 12 months of their stay.

### **2.2.3. Short-term projects of ODA and DAH result in unsustainable assistance and dependency**

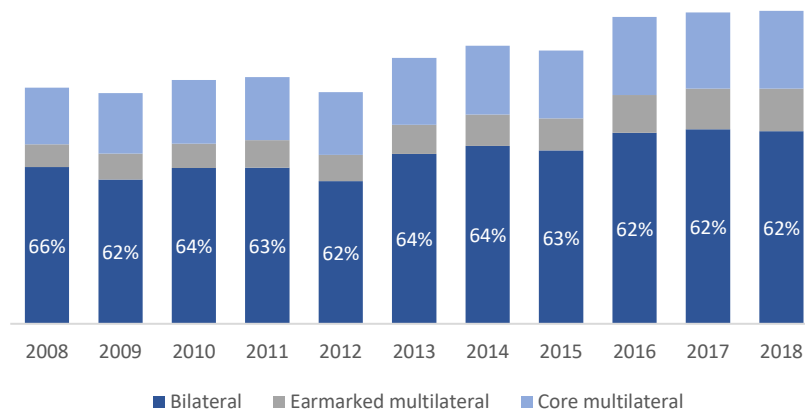
ODA has long been challenged as to its non-sustainability, which resulted from its short-term assistance to the recipient countries. The actual issue from these short-term assistances is that recipient countries get used to the aid they receive and lost the capability and willingness to develop themselves. Aid dependence is defined as the "situation in which a country cannot perform many of the core functions of government, such as operations and maintenance, or the delivery of basic public services, without foreign aid funding and expertise". Aid has made many African countries and other poor regions incapable of achieving economic growth and development without foreign assistance. Most African economies have become dependent on aid and this is because foreign aid has become a significant norm of systems of international relations between high- and low-income countries across the globe.

As Figure 8, Since the majority of ODA projects are proceeded in bilateral, it usually concluded in short-term projects. DAC members, which are individual countries, are mostly democratic countries. Democratic countries elect presidents every certain year

results in a change of politics, social, etc., which eventually impacts priorities of official development assistance of each country. It is controversial in ODA projects that ODA is leading negative impacts to the development.

From the following figure, declining levels of ODA are also a big concern in the sustainability of projects. Aid to health has fallen in a number of the largest recipients since 2017 also. As the top three donors accounted for 60% of aid to health in 2018, and the top 15 accounted for 90%, the decrease of the US became the concern of current status. The US was the largest donor of ODA to health in 2018, disbursing the US \$8.4 billion, and accounting for 37.9% of total health disbursements. Levels from the US decreased by 6.8% from 2017 when the US disbursed US\$9.0 billion. The fact that decreasing ODA funds from the top donor countries, and the limits of long-term projects, are resulting in an increase of dependency of the recipient countries and sustainable development.

*Figure 8. DAC countries and other official providers- Bilateral and Multilateral ODA allocations (Gross disbursements, million USA, 2018 constant prices)*



Source: OECD, 2020

### III. Public-Private Partnership in Health Infrastructure Development

#### 3.1. Definition of Public Private Partnership

Table 7. Definitions of Public Private Partnership

Item		Definition
Public-Private Partnership (PPP)	World Bank (WB, IFC)	a <b>long-term contract</b> between a <b>private</b> party and a government entity, for providing a <b>public</b> asset or service, in which the private party bears significant risk and management responsibility through the life of the contract, and remuneration is linked to performance
	Asian Development Bank (ADB)	a range of possible relationships among <b>public</b> and <b>private</b> entities in the context of infrastructure and other services
	European Investment Bank (EIB)	an arrangement between a <b>public</b> authority and a <b>private</b> partner designed to deliver a public infrastructure project and service under a <b>long-term</b> contract
	Inter-American Development Bank (IDB)	a <b>long-term</b> contract between a <b>private</b> party and a government entity for providing a <b>public</b> asset or service, in which the private party bears significant risk and management responsibility and remuneration is linked to performance.
	PWC	a form of <b>long-term</b> contract between a <b>government</b> and a <b>private</b> entity, through which the government and private party partner in the provision of public services.

Public-Private Partnership is a long-term contract between a government and a private entity, purposed to develop public services through the partnership. A study exploring 14 different multilateral organizations and national laws covering PPPs found that each used a slightly different definition to describe them. One reason is that PPPs have evolved over the last three decades as global policy mechanisms that go beyond infrastructure, and they include such activities as economic development, service delivery, and more general project delivery. Although the definition of PPP varies by the organizations, they all agree on PPP is about long-term projects, the partnership between the public and the private, and lastly looking for improving public services. They are an example of multi-stakeholder governance which is a key target of the United Nations Sustainable Development Goal 17.

Under a PPP arrangement, the private partner takes on significant financial, technical, and operational risks and is held accountable for defined outcomes. PPPs provide governments with alternative methods of financing, infrastructure development, and service delivery. By making capital investment more attractive to the private sector, PPPs can reduce the risk for private investment in new markets and ease barriers to entry. In the past three decades, governments from low- to high-income countries have increasingly sought long-term partnerships with the private sector to deliver services in sectors such as transportation, energy, and waste. Healthcare partnerships have emerged more cautiously but have rapidly expanded since the early 2000s. The emerging partnerships have tackled a range of healthcare system needs—from the construction of facilities to provision of medical equipment or supplies, to delivery of healthcare services.

While relatively simple “design, build, finance and maintain” models, like the British hospitals built under the Private Finance Initiative (PFIs), remain the most commonplace, an increasing number of governments are experimenting with or considering more ambitious models, which include the provision of clinical services within the private partner scope of the PPP.

### 3.2. History and Trend of Current PPP

Public goods and services can be delivered in two ways, which is through direct provision by governments and full privatization of that. In order for governments to deliver public goods and services to the people require a substantial number of financial back-ups. And as most of us already understand, public infrastructure and services are not small-scale projects, they usually require multilevel agreements, which usually delays the project execution. The financial pressure on public accounts has pushed the expansion of new formulas that allow the channeling of alternative resources so that Governments that previously both produced and provided services now tend to increasingly rely on the market for either input to government production and provision or for direct provision of goods and services. This move has occurred for ideological reasons as well as to better obtain value for money. Through PPP the government enters a long-term contract with a private partner to deliver a good or service. The private partner is responsible for building, operating, and maintaining assets that are necessary for delivering the good or service.

Although private companies have already long been involved in public service developments, until the introduction of PPP in the 1990s, the partnership was defined and clarified the roles of the public and the private sectors. As table 8 described, the controversies among PPP projects do exist, which shows the pre-discussion points for government and public sectors before they participate in PPP projects.

*Table 8. Role and responsibilities of public-private partnerships*

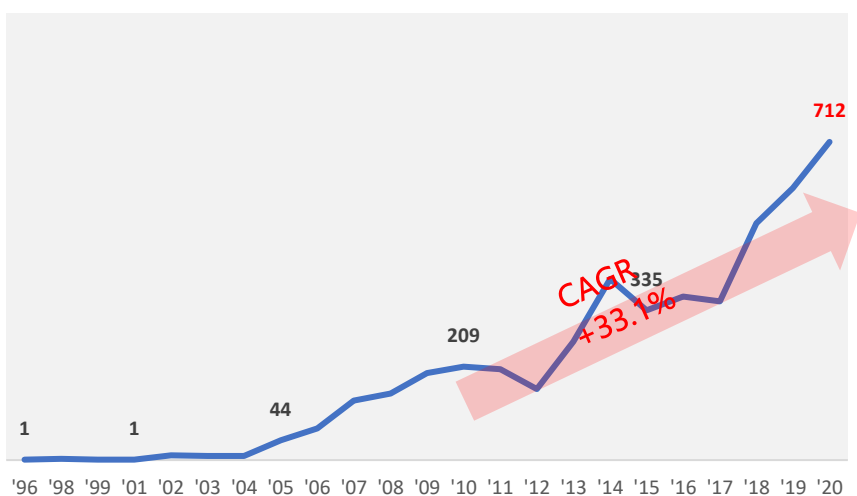
<b>Criteria</b>	<b>Government/Donors</b>	<b>Private Investors</b>
<b>Strategic Role</b>	<ul style="list-style-type: none"> <li>• Providing the legal framework for establishment &amp; operations</li> <li>• Overall responsibility for planning &amp; monitoring market operations</li> <li>• Guiding &amp; monitoring public interest</li> <li>• Contributing to capital raising</li> </ul>	<ul style="list-style-type: none"> <li>• Contributing to design</li> <li>• Capital raising for establishment (Capex)</li> <li>• Raising operating capital (Opex)</li> </ul>

<b>Operational Responsibility</b>	<ul style="list-style-type: none"> <li>• Management of operator’s contract</li> <li>• Providing the rules &amp; incentives for the operator</li> <li>• Monitoring performance</li> </ul>	<ul style="list-style-type: none"> <li>• Operating &amp; managing market</li> <li>• Increase throughput, turnover &amp; profitability</li> <li>• Delivering on KPIs</li> </ul>
<b>Strengths</b>	<ul style="list-style-type: none"> <li>• Maintains public interest with commercial viability</li> <li>• Leverages private sector expertise and capital</li> <li>• Leverages government’s ability to draw on</li> <li>• Donor support and advice</li> <li>• Provides political support</li> <li>• Transfers operational risk to the private sector operator</li> </ul>	<ul style="list-style-type: none"> <li>• Co-opts government as an interested partner rather than just external regulator</li> <li>• Provides for private sector to manage operations &amp; profitability</li> <li>• Extends the start-up support in necessary</li> </ul>
<b>Weaknesses</b>	<ul style="list-style-type: none"> <li>• Dependent on government’s ability to regulate adequately and in a timely manner</li> <li>• Dependent of government’s ability to manage contracts</li> <li>• Dependent on government’s ability to effectively administer the Authority</li> </ul>	<b>Partner risk:</b> <ul style="list-style-type: none"> <li>• Government’s efficiency &amp; effectiveness</li> <li>• Political influence over direction rather than economic rationalism</li> <li>• CSR may be onerous</li> </ul>
<b>Opportunities</b>	<ul style="list-style-type: none"> <li>• Gov/Donor support during extended start-up</li> </ul>	<ul style="list-style-type: none"> <li>• Option to purchase</li> </ul>

Source: Bryan Bonney, Lawrence, 2012.

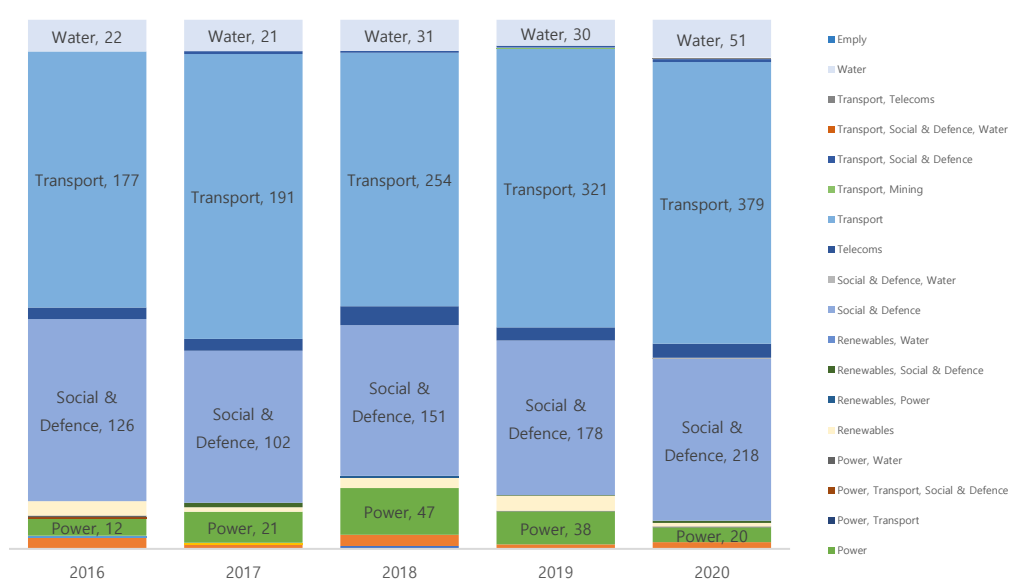
As Figure 9, PPP projects are increasing with a CAGR of 33.1% from 1996 to 2020 (IJGlobal). Although CAGR growth has decreased to 12.7% (2015 to 2019), but the growth of the PPP projects in infrastructure development is still impressive. Most PPP projects focused on public infrastructure projects such as a new telecommunications system, airport, power plant, building and equipping of schools, hospitals, transport systems, and water and sewerage systems. As Figure 10, most PPP projects are focused on power (CAGR 11%), social & defense (CAGR 12%), transport (CAGR 16%), and water (CAGR 18%).

*Figure 9. Annual Growth Trend of PPP Projects Numbers*



Source: IJGlobal

Figure 10. Growth of PPP Projects by Transection Sector



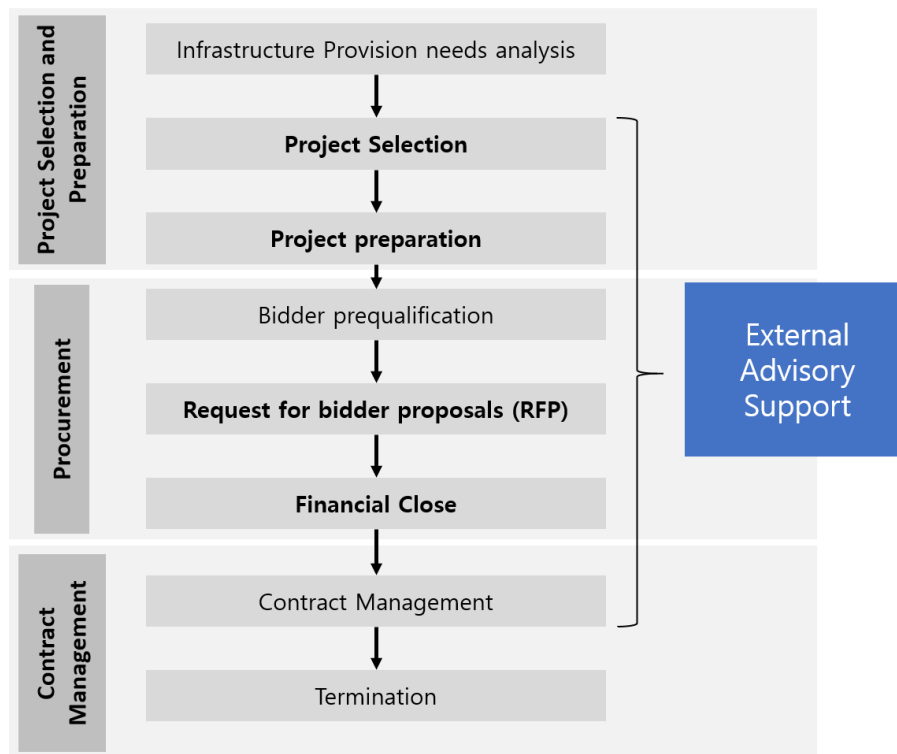
Source: IJGlobal



### **3.3. The key process phases of Public-Private Partnerships**

The success of a PPP project greatly depends on how well it is planned and structured upfront, how well it is carried out, and how well it is managed over the lifetime of the project. Breaking down PPP projects into smaller parts can significantly simplify the process and can help to achieve efficient and effective partnerships between the public and private sectors. Figure 11 shows an illustration of a typical PPP life-cycle. In this process, the government first identifies the need for various infrastructure projects before selecting the projects that have the largest positive impact on society. After the project preparation, the government pre-selects several bidders and requests proposals from them for the project. In the next step, the government selects a preferred bidder, with whom it closes the financial contract. After contract closure, the government has to regulate and monitor the service provider of the PPP undertaking over its lifetime.

*Figure 11. Overview of typical PPP life cycle*



Source: PPIAF, 2011

From the viewpoint of the government, the PPP life cycle can be divided into three main phases:

(1) Project selection and preparation: Definition of priorities and aims of possible PPP program. Identification, evaluation, and selection of projects. Preparation of PPP engagement, including the definition of responsibilities as well as performance and financing measures.

(2) Procurement: Issuance of tender notice with pre-qualification criteria, short-listing of bidders, selection of winning bidder, and closure of the contract.

(3) Contract management: Facilitation of communication amongst parties. Supervision of fulfillment of contractual responsibilities of private party. Application of

relevant remedies or penalties. Termination of contract.

Over the whole process, it is important that the government plays a holistic role in developing, implementing, and supervising the PPP project. Therefore, it is key that the public sector does not only select a contracting party but a partner and implements clear and transparent processes and responsibilities. (PPIAF, 2011)

### **3.4. PPP in health**

Providing accessible, affordable, quality healthcare is the key driver of economic growth and development for a country. Furthermore, persistent epidemics, non-communicable disease growth with the aging population, increasing cost and complexity of diagnosis and treatment, remained communicable disease in developing countries, along with increasing demand of global demand for more and improved healthcare come together to create a highly complicated and costly challenge.

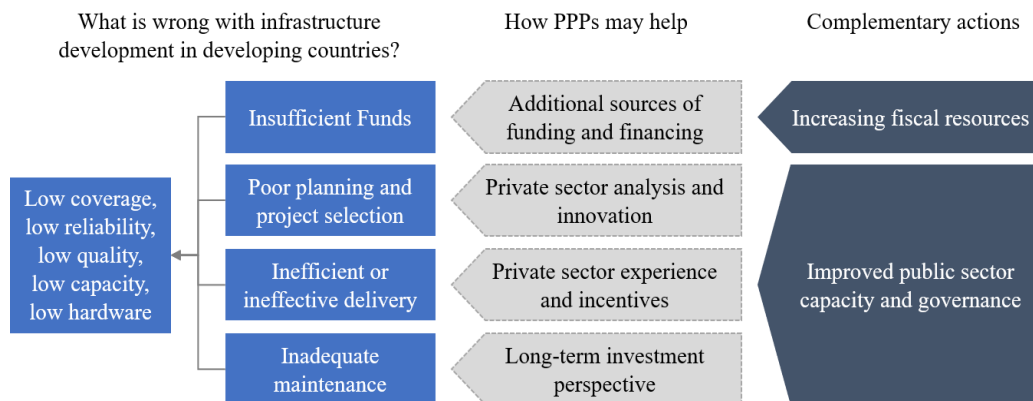
As these needs and expectations are growing from every corner of society, the governments are being more pressure by various shortages of resources. The public sector is often constrained by the lack of funding, access to innovation and technology, sustainable supply of medical professionals, and efficient and experience healthcare management. PPP can be helpful to expand the key health services and improve quality, complementing the traditional public-sector approach with various forms of private sector participation.

Well-structured PPPs can improve the delivery of medical service by (PPP Knowledge Lab, 2019):

- facilitating the development of new/refurbished primary, secondary and tertiary health facility infrastructure;
- increasing quality by delivering services to contractually defined standards;
- expanding access to scarce clinical skills by employing and training staff that would not have been attracted to a traditional public facility; and

- increasing the quality of care by ensuring regular maintenance and technology upgrades

Figure 12. How PPPs can help to overcome the challenges of infrastructure provision



Source: The World Bank Group, 2014

Delivering medical services through PPP has various methods, especially PPP takes bigger roles in the hospital sector. However, PPPs in the healthcare sector vary in the scope of services covered. Table 9 below, which Independent Evaluation Group (EIG) from World Bank Group adopted, shows the different types of PPPs in the healthcare sector. The main difference among them is that the share of risks between the private and the public. The level of risk-sharing depends upon the level of capital committed by the private, the length of the partnership, the provision of renegotiation, and the payment mechanism.

The World Health Organization (WHO) established the Commission on Intellectual Property Rights, Innovation and Public Health (CIPRH) in 2003, which noted that PPPs were seen as an effective way to take advantage of the relative benefits of the public and private sector, without overburdening either party and to address the need to create incentives to develop treatments for diseases that largely affect developing markets specifically. Despite wide variability in PPP structure and participating stakeholders,

PPPs in the health sector typically fall into one of three categories: health services, health infrastructure, or an integrated model of the two.

*Table 9. A Typology of PPPs in Healthcare Sector*

<b>PPP Model</b>	<b>Common Term</b>	<b>Definition/Explanation</b>
<b>Health services only (selective)</b>	Operating contract, performance-based contract (concession, lease)	A private operator is brought in to operate and deliver publicly funded health services in a publicly owned facility
<b>Facility finance (accommodation only)</b>	Design, build, finance, operate (DBFO), build, own, operate, transfer (BOOT), UK's PFI	A public agency contracts a private operator to design, build, finance, and operate a hospital facility. Health services within the facility are (mostly) provided by government
<b>Combined (accommodation and health services)</b>	Twin accommodation/clinical services joint venture/ Franchising, PFI+	A private operator builds or leases a facility and provides free (or subsidized) healthcare services to a defined population.

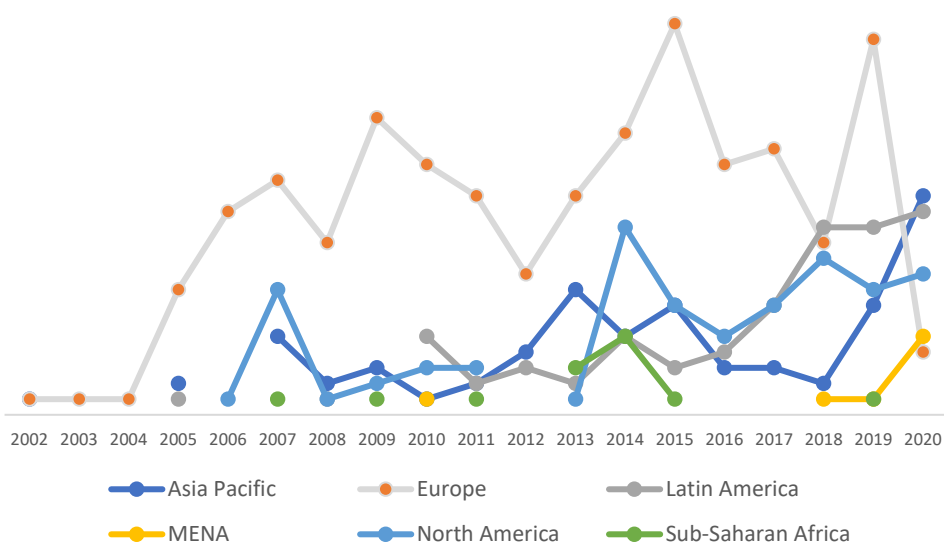
Source: Independent Evaluation Group. 2016

### **3.5. Features of common PPP models in healthcare**

PPPs in healthcare provides opportunities for governments to leverage private sector resources and expertise, to enable investment in large-scale projects that advance national and local public health goals, such as improving quality of service delivery and expanding access to care. Partnerships between the public and the private in healthcare are widely applied in high-income countries, as figure 13, 50% of healthcare PPP projects are executed in Europe, 16.2% in North America. In growing economic countries, 14.8% are done in Latin America and 14.6% in the Asia Pacific. But the region with most

developing countries are, are still getting experiences with PPP in healthcare; 1.7% in MENA, 2.7% in sub-Saharan Africa.

Figure 13. Number of PPP Healthcare Projects by region (Oct 2020)

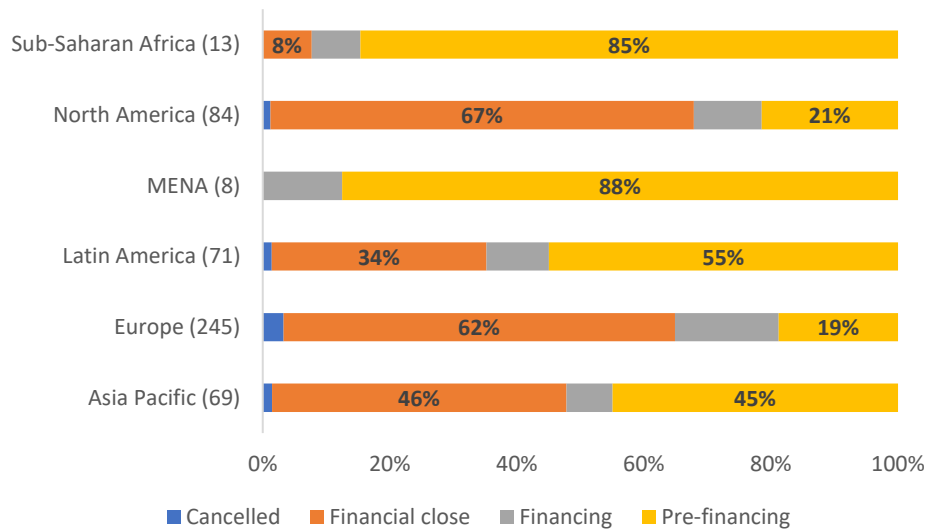


Source: IJGlobal Project Finance and Infrastructure Journal Project Database, accessed by Oct 15, 2020

The notable ones are not the numbers of healthcare PPP projects in the globe, it's the level of execution. As PPP projects are following stages as 1. Identify a need, 2. Consider delivery options, 3. Issue competitive tender, 4. Award contract, 5. Initiate operations, which means financial closure is the preliminary requirement of the project. But as figure 14, compared to developed regions, such as Europe, North America, other regions which are mixed of developing countries and developed countries, and region mainly with developing countries, are having difficulties reaching financial closure. Since PPP projects are done by partnerships between the public and the private, it usually requires a minimum revenue guarantee. But since health delivery isn't predictable with

the demand, and the low credential of developing countries results in difficulty of obtaining substantial finance.

Figure 14. Transaction Stage by Region (Total Healthcare PPP Projects since 2002) (Oct 2020)



Source: IJGlobal Project Finance and Infrastructure Journal Project Database, accessed by Oct 15, 2020

ODA usually faces difficulty in the measurement of its effectiveness. But PPP projects are obvious, which it shows with numbers. When other infrastructure PPP except for health-related projects, they usually have off-takers, who are the single buyer who commits to buying all the project company's output, based on long-term purchase contracts often signed on a take-or-pay basis (the off-taker commits to buying a good or service produced by the SPV and is obligated to pay even if it does not actually take a good or service). And from the most recent operating integrated PPP model, a hospital network in Lesotho receives a yearly unitary payment over the course of the contract. And the level of payment to SPV by the government is contingent on SPV's meeting

contractual performance indicators measured through quarterly audits by a jointly appointed independent monitor. The indicators measure performance in such areas as clinical care, patient volume, equipment, facilities management, and staff certification and training. This shows that PPP can be easily measured since it starts with the exact numbered target.

## IV. Case Study Analysis

### 4.1. Success and Failure from experiences of international banks and organizations

The majority of Bank Group health PPPs supported the combined health service provision (48 percent). Of this group, the large majority (60 percent) supported the provision of selective services (such as diagnostic, imaging, dialysis, or radiotherapy) followed by the provision of general hospital services (30 percent). The second-largest share is health-services-only PPPs (42 percent) supported a large variety of health services including packages of essential health services (such as maternal and child health or HIV/AIDS services). The lowest share of projects (10 percent) focused on facility finance, supporting only the construction and the operation of non-clinical services (Table 10)

*Table 10. Type of health services provided*

PPP model	Type of health services provided
<b>Facility finance, accommodation only</b> (10%)	Type of facility: General hospitals: 4 Primary care clinics: 1
<b>Health services only (selective)</b> (42%)	Services provided: General hospital services: 5 Diagnostic, imaging, dialysis or radiotherapy: 5



	Package of essential health care services (maternal and child health, HIV): 7
<b>Combined health services provision (48%)</b>	Type of facility and services: General hospital: 7 Diagnostic, imaging, dialysis or radiotherapy: 14 Maternal and child health care and diagnostic and imaging: 1 Hospital-based and primary care services: 1

Source: IEG

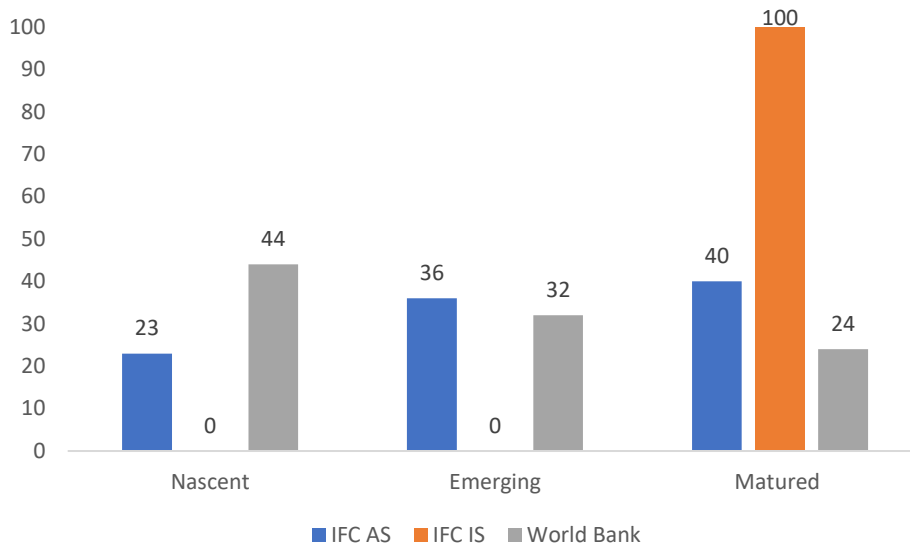
The World Bank’s upstream support focused on capacity building. About 60 percent of the World Bank’s upstream work focused on capacity-building efforts. Strategy and legal and regulatory frameworks for PPPs were the second most frequently addressed enabling factors by the World Bank. The focus on capacity building has been increasingly pronounced in the past four years. Between FY11 and FY15, there were 13 instances of capacity building; by contrast, FY08-11 and FY04-07 had only five instances each. This increase represents a much-needed effort to strengthen countries’ ability to assess the appropriateness of deploying PPPs in the health sector or how to structure such engagements. The 2013 macro evaluation of PPPs had identified the lack of local skills and resources for the preparation of a PPP pipeline as a serious limitation across most Bank Group–supported countries.

The Bank Group supported downstream work in increasing numbers through advising on transactions and, to a much lesser extent, through investment projects. IFC Advisory Services took the lion’s share, providing about 78 percent of all downstream support, bringing health PPP transactions to commercial and financial closure. The World Bank provided 15 percent of downstream support while IFC IS provided a mere 7 percent of it, bringing financing only to a few projects.

As expected, the World Bank engages mostly nascent countries, whereas IFC supports countries in more emerging and mature environments. Forty-four percent of World Bank projects engage in nascent countries, typically helping them to create the enabling environment for PPPs. In contrast, IFC Investments and AS flow more to countries with emerging and mature frameworks: 36 percent of Investments and 40 percent of AS to emerging countries, and 40 percent to mature countries, whereas 23 percent goes to nascent countries. The difference is understandable: World Bank projects mostly support upstream activities such as capacity building, sector reform, and legal and regulatory frameworks; PPP transactions are typically supported in countries where the enabling environment is ready for their implementation.

Interestingly, when Bank Group support for health PPPs is compared with its support of infrastructure PPPs, a higher share of health PPP projects goes to nascent countries than is the case in the infrastructure portfolio of projects; that is, to countries with less developed PPP frameworks and a very limited record of using PPPs. Twenty-three percent of IFC AS projects are in nascent countries, which is a relatively high share, given that only 5 percent of its infrastructure PPPs are located in nascent countries. Similarly, 44 percent of World Bank health PPP support is in nascent countries, compared to 19 percent for infrastructure PPPs.

*Figure 15. Distribution of Health PPP Interventions by Level of Maturity of Client Countries*



Source: IEG and EIU Infrascope data

Table 11. The Infrascope Index by EIU (Number of Healthcare Infrastructure Projects by IJGlobal)

<b>Introscope Index Ranking</b>	<b>Measuring the Enabling Environment for PPP in Infrastructure</b> (The index evaluates readiness and capacity by dividing the PPP project life cycle into five components: Enabling laws and regulations, the institutional framework, operational maturity, investment and business climate and financing facilities for infrastructure projects)
	<b>Mature</b> Thailand
<b>Developed</b>	Chile(27), China, Colombia(5), Perú(10), India(12), Philip pines(5), Gujarat State, Jamaica(2), Brasil(7), Costa Rica, Côte d'Ivoire, Guatemala, Honduras, Uruguay, El Salvador, Sindh Province, Bangladesh(3), México(20), Senegal, Vietnam(1), Kosovo, Kyrgyz Republic, Slovakia(1), Jordán, Níger, Pakistán(4), Serbia

<b>Emerging</b>	Benín, Ecuador, Indonesia, Kazakstán(3), Nepal, Nicaragua, Turkey(29), Zambia, Panamá, Tunisia, Ethiopia, Ghana(1), Morocco, Egypt, Burkina Faso, Trinidad and Tobago, Mongolia, Paraguay, Bahamas, Dominican Republic, Ukraine, Argentina(1), The Gambia, Albania(1), Romania(3), Belarus, Timor-Leste, Georgia(1), Sri Lanka, Bulgaria, Tajikistan, Armenia, Malawi, Liberia, Sierra Leone, Barbados, Lesotho(1), Togo, Papua New Guinea, Solomon Islands, Venezuela
<b>Nascent</b>	Venezuela

Source: The Economist, IJGlobal, 2020

## 4.2. Success and Failure from experiences of private sectors

Approach of Healthcare Infrastructure Public-Private Partnership (PPP) in Developing Countries\_ for the equal good to Korea Interest Group and the Recipient Country.html

Table 12. PPP relations and tensions

	<b>Pubic Actors</b>	<b>Private Actors</b>	<b>Tension</b>
<b>Core Business</b>	<ul style="list-style-type: none"> <li>Public objectives and political preconditions</li> </ul>	<ul style="list-style-type: none"> <li>Realizing profit and financial preconditions</li> </ul>	<ul style="list-style-type: none"> <li>Different risk perceptions (political risk in expectations and market risks in actual figures)</li> </ul>
<b>Values</b>	<ul style="list-style-type: none"> <li>Loyalty</li> <li>Risk avoidance and preventing expectations</li> </ul>	<ul style="list-style-type: none"> <li>Competitive</li> <li>Market opportunities, risk and innovations</li> </ul>	<ul style="list-style-type: none"> <li>Public sector reticent in process and result vs private sector reticent in knowledge and</li> </ul>

			own commitment
<b>Strategies</b>	<ul style="list-style-type: none"> <li>• Guaranteeing substantive influence</li> <li>• Minimizing cost-overruns</li> </ul>	<ul style="list-style-type: none"> <li>• Seeking certainties for production and opportunity for attaining commissions</li> <li>• Expanding return on investments</li> </ul>	<ul style="list-style-type: none"> <li>• Conflicts lead to tested forms of co-operation (contracts)</li> </ul>
<b>Consequences of PPP</b>	<ul style="list-style-type: none"> <li>• Emphasis on risk limitation, and decisions making leads to public dominance</li> </ul>	<ul style="list-style-type: none"> <li>• Emphasis on certainty of market share and returns leads to waiting behavior and limited investment until the date of commission is attained</li> </ul>	<ul style="list-style-type: none"> <li>• PPP fails to generate added value</li> </ul>

Source: Kljin and Teisman (2003, 2005) and Teisman and Kljin (2004)

From interviews of stakeholders who participated in PPP projects in health service delivery in the Sindh province of Pakistan, it revealed that participants had a very limited in-depth understanding of the concept of PPP. stakeholders including officials from provincial government and district administrations, and representatives from private sector organizations with a direct or indirect role in the implementation of PPP policy, showed that participants considered multifaceted corruption in the health system and the success of existing PPP initiatives as the main reasons for the PPP policy adoption. Resistance from healthcare staff was perceived as the main barrier to the implementation of PPP. There was a common perception that better monitoring capacity in the private sector management can be a cause of concern for public sector employees who may have become used to less efficient working. A common theme found in the narratives was the possible apprehensions from healthcare staff about the loss of their jobs. (Kahn et al., 2019) The partnership between the public and private brought different levels of difficulties to each other. Support and cooperation of public sector healthcare staff is key to the success of the implementation of PPP, and the staff should be invited to participate

in the policy dialogue, their concerns should be addressed and the process should be revised in discussion with them.

As healthcare, and particularly the privatization of healthcare, is a sensitive subject, formal communication and engagement plan for managing public perceptions would assist in the management of critical issues. (Barrows et al., 2012).

More than half of the interviewees mentioned that a well-functioning relationship between the public and private sectors is based on mutual trust and open communication. Furthermore, the entrepreneurs expressed the need for balanced treatment whenever companies operate alongside public sector service providers. Most participants enjoyed respect, their know-how was trusted, and they were treated fairly. On the other hand, some entrepreneurs were disappointed in the procedures of the public sector and the business opportunities it offers. Consequently, they had decided to focus on private customers only. The following quotations from the interviews exemplify the views of the entrepreneurs:

*I had hoped for fair play so that private and public service providers could compete evenly.*

*For instance, that's not the case when the need for workers is calculated.*

*Openness and trust are key issues. Problems need to be solved immediately.*

Three main categories affecting PPP were identified from the empirical data, i.e. the nature of the partnership, business aspects, and tensions. The main categories comprised of eight subcategories. The results are illustrated in Figure 1 and are described in detail in the next chapters. The conclusions of the researchers are demonstrated through quotations from the interviews.

- **The nature of partnership** – this category describes mainly the issues related to the interface between service providers and the public sector clients and the nature and characteristics of this interface.
- **The business environment** – this category describes how the service providers experienced their prospects of carrying out their business and services at the time of the interviews, but this category bears some elements concerning their expectations regarding prospects.
- **Tension builders** – this category addressed issues that were seen as potential or existing problems that called for attention. Some of these issues represented certain factors of the business environment and structural challenges that are beyond any control of the entrepreneurs.

The interviewed entrepreneurs repeatedly stated that the public sector does not sufficiently utilize its ability to offer tailored services to the customers. From the customers' point of view, this can result in undersized or oversized services. The entrepreneurs wished for the participation of customers and their families in service development. This would potentially engage the employees more in their tasks and create a wider view regarding the meaning of their services. Moreover, new insights in terms of how to develop work processes and enhance the level of service might well emerge. Differences in operational logic seemed to be one source of conflict between the public and private sectors. Companies need to generate profits, whereas municipal service providers do not have this objective. This raises ethical questions. Is it possible to simultaneously pursue profits and fulfill the needs of the customer within social services and health care operations?

Many of the entrepreneurs have managed to create a good relationship with the public sector. Nonetheless, some of the interviewees expressed feelings of

disappointment and frustration when they were asked to describe their relationships with municipal decision-makers. Indeed, some entrepreneurs even rejected the business opportunities offered by the public sector and focused on private customers. In the entrepreneurs' opinion, the bureaucracy, lack of resources, and inflexible regulations of the public sector were the most important barriers for fluent co-operation. One entrepreneur characterized the present management style of the public sector as "extinguishing small fires" instead of looking to improve services and operations in the long run. The majority of the PPPs in our data were based on contracts rather than partnership. Klijn and Teisman (2005) have brought up the question of whether the contract form is really PPP at all, as the contract form lacks joint decision making and real added value.

In many interviews, shared discussion forums were suggested for improving the relationships between the public and private sectors. In practice, this could be realized as joint training days, seminars, or recreational events. Active communication between entrepreneurs and civil servants would probably speed up emerging new product and service innovations within social services and health care. Productive co-operation needs certain basic elements such as trust, open communication, and the capability to make compromises and construct a shared vision. Then the elements must be facilitated by a regulatory system that supports the co-operation, and there must be sufficient financial resources (See Jacobson and Choi, 2008; Fink and Kessler, 2010; Ismail, 2013). In our sample, there is a gap between the current state of things and the desired elements.

Some entrepreneurs were confused or uncertain regarding their role within the communal social services and health care system. From the entrepreneurs' point of view, it would be desirable if municipalities were to compile service strategies to explicitly describe what kind of services and to what extent will be purchased from the local service providers. Municipal service strategy would support the predictability of decision making and thus improve the business opportunities of local service providers. Such strategies



would also add competition between service providers since business projections and service design could be taken to a new level. However, this might also be a threat to smaller service providers although this threat was not recognized by the interviewees.

### **4.3. Success and Failure from personal healthcare PPP projects participation**

The writer was highly honored to gain experience with healthcare PPP in an organization. Although I was not able to witness the complete process since I have left the company, I have gone through the pre-feasibility study, feasibility study, the consulting process from different projects.

Through the experiences, I have realized the importance of a neutral position between the public and the private in communication, decision, and negotiation through the process. Especially when the project initiation was more led by the private, the cooperation of the public becomes a challenge during the whole research. For the projects that were destined in low-income countries, the information is quite scarce and the credibility of them is also questionable. Thus, the cooperation of the government is essential to proceed the medical planning, operational planning, procurement planning, etc. Also, since the governments' PPP law is mostly designed for other infrastructure like water, power, transport, which do have a decided off-taker, made the whole designing of the joint-development agreement, or financial structure, feasibility process to another level of difficulty.

*Table 13. Healthcare PPP Project Summary of the writer*

<b>Item</b>	<b>Kyrgyzstan State Medical Academy PPP Hospital Development</b>	<b>Creation of India-Korea Rajasthan Bio-Medial Cluster Project</b>
<b>Current Status</b>	Consulting Stage	Pre-Feasibility Stage

<b>Project Recipient</b>	Ministry of Health Kyrgyzstan	Government of India, State of Rajasthan
<b>Location</b>	Bishkek, Kyrgyzstan	Bagru Chittroli, Rajasthan, India
<b>Business Model</b>	Build-Operate-Transfer (BOT)	Build-Operate-Operate (BOO)
<b>Project Time</b>	20 Years	20 Years
<b>Healthcare PPP Type</b>	Infrastructure-based Model	Infrastructure-based Model
<b>Project Scope</b>	University Hospital (500 beds – 300 greenfield and 200 brownfield)	University Hospital (1,000 beds), R&D Center, Education Institute, Commercial Laboratory, Mega Blood Bank, Medical Device Manufacturing Platform, Pharmaceutical Manufacturing Platform
<b>Work Scope</b>	Financing, Design, Construction, Medical Equipment Supply, Facility Maintenance, Non-Clinical Services	Financing, Design, Construction, Medical Equipment Supply, Facility Maintenance, Partial Clinical Services (Laboratories, Blood Bank)

#### 4.3.1. Kyrgyzstan State Medical Academy (KSMA) Hospital PPP Project

Figure 16. Project Concept and Mission Statement



The vision for the project is to establish a general hospital that faithfully serves its patients' basic and normal medical care, an environment that reinforces conventional hospital functions and fosters growth of its medical personnel. The quality of medical services will undergo gradual improvements to ultimately match that of a highly advanced hospital; to achieve this, an environment where the standard functions of the hospital as well the standard capability of the medical personnel may be empowered is necessary.

In principle, medical expenses of this hospital should be paid by the patients out of pocket, and the hospital should establish standards and norms for medical training by becoming a hospital of education and training where graduates of medical schools may grow into specialists. The hospital should focus on the most common causes of diseases and deaths instead of rare diseases affecting only a few.

The hospital's facilities and equipment will focus on the essential and most basic equipment rather than installing the latest high-tech, high-end, expensive equipment.

Also, we will increase the operation rate and utilization of equipment to maintain normal functions to increase efficiency. Sufficient medical equipment will be able to build a digital-based network to establish a new concept of hospital information system shared with specialized hospitals such as heart centers, cancer centers and surgical hospitals that have geographical proximity around university hospitals, thereby controlling medical costs and reducing the financial burden on patients.

The purpose and direction of the medical school affiliated hospital should draw up measures to overcome the challenges and difficulties of health care in Kyrgyzstan. It is necessary to serve as a hospital that guarantees the universal health of the people of Kyrgyzstan through the establishment of a hospital with specific purposes.

### **Role and Functions**

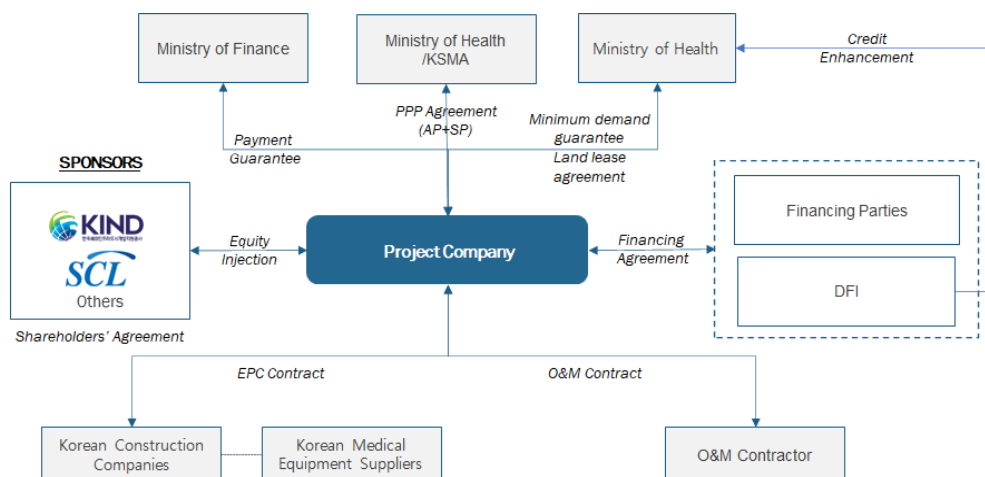
- **Diagnosis:** As a university hospital that accommodates the three stages of medical service in Kyrgyz healthcare system, the hospital will be equipped with essential medical facilities and equipment to provide safe and high-quality medical services to the general population, incorporating international standards into its daily clinical care services.
- **Education:** As a training institution, the hospital will establish a standardized clinical education system to train medical students by providing them with basic medical knowledge and clinical skills. In addition, education and training centers for graduates and trainees will be established to train high-tech medical skills in hopes of empowering the overall level of clinical skills in modern clinical education and training systems. This will ultimately contribute to cultivating excellent professional medical personnel nationally.
- **Research:** The establishment of modern research facilities will create an accessible point of linkage between the medical industry and research facilities by actively

allowing clinical research to be conducted between interconnected medical schools and clinical sites.

- **Resource Sharing:** Introducing a system allowing open use of essential medical facilities and equipment with nearby hospitals will increase the efficiency of medical resource use at the national level.

### Project Structure

Figure 17. Establishment Plan of KSMA Hospital



Scope of work for EPC Contractor includes Hospital Architecture, Medical Equipment, and Hospital Information System (HIS). The Project Company and Ministry of Health (MOH) will sign land concession agreement or long-term lease contract for the hospital PPP project. MOH and KSMA will grant development and operation of the project to the Project Company, in which MOH will provide Availability Payment (AP) and Service Payment (SP) to the Project Company.

Kyrgyzstan's Ministry of Finance will provide payment guarantees for the payments including AP/SP and termination payment to the Project Company. Due to Kyrgyzstan's

low sovereign credit ratings, credit enhancement program from DFIs is critical for financing consideration.

### Country Profile

*Table 14. Country Overview*

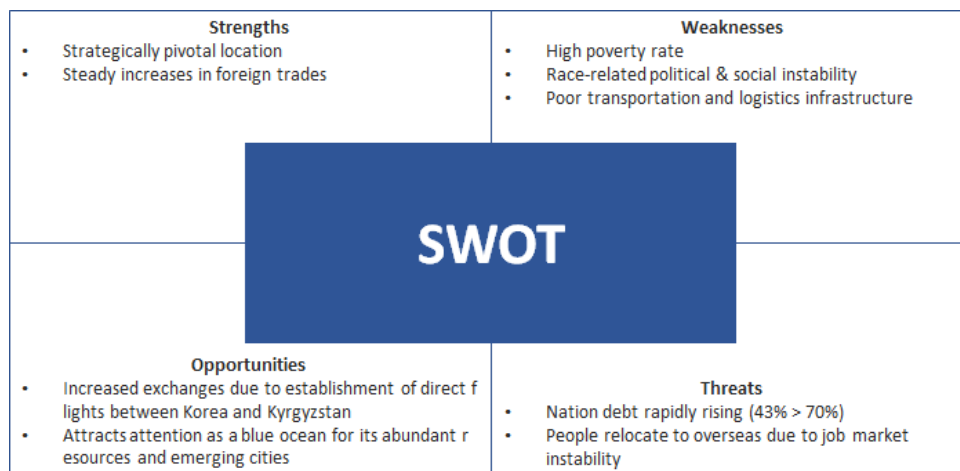
Item	Description
Name	Republic of Kyrgyzstan
Location	Central Asia
Area	199,900 km <sup>2</sup>
Climate	Continental Desert
Capital City	Bishkek
Population	6.4 Million (2018)
Main Cities	Bishkek
Ethnicity	Kyrgyz (71%), Uzbek (14%), Russian(8%)
Language	Kyrgyz, Uzbek, Russian
Religion	Islam (75%), Russian Orthodox Church (20%)
Foundation	1991. 8. 31(Soviet Union)
Government Structure	Parliamentary
President	Sooronbay Jeenbekov

### Political Status

On November 24, 2017, Prime Minister Sooronbay Jeenbekov was elected the 7th president, which was Kyrgyzstan's first peaceful change of government since independence from the former Soviet Union in 1991. In addition, for the first time in Kyrgyzstan's history, a democratic transition of power to the next president was realized after completing the constitutional presidential term. President Sooronbay Jeenbekov, a former farmer, was elected to parliament in 1995 and has been engaged in parliamentary activities for 12 years. He was selected as prime minister in 2016 after serving as agriculture and fisheries minister. President Sooronbay Jeenbekov is pro-Russian and has maintained a strong pro-Russian line under former President Atambayev.

During his first year in office, President Jeenbekov visited four Central Asian countries and discussed the status and prospects of national relations and the direction of regional cooperation for trades, economy and investments. In addition, the pro-Russian president visited Russia shortly after taking office and confirmed his foreign policy for “strengthening and developing alliance and strategic partnerships”. This action brought major progressions in the diplomatic relations between the two countries; following the Kyrgyz policy, Russia pardoned illegal immigrants from Kyrgyzstan and removed them from the Russian Immigration Bureau’s immigration blacklist.

Figure 18. SWOT Analysis of Political and Economic Activity



Kyrgyzstan's major hospitals are public hospitals that receive financial support from the state, although some of hospitals are free of charge but also some of them collect medical bills based on the number of practices. Therefore, it is believed that the medical school affiliated hospitals to be established in the future will be operated in the same form.

Surgical, cancer and cardiac hospitals are specialized and offer high levels of medical services. But rather than relying on the hospital's normal functioning, it relies on a handful of professionals with outstanding skills and reputation in one area. It is

understood that the normal functions of the hospital are not performed and that the systematic training of next-generation experts through normal care and operation is not carried out.

The lack of government financial support and the resulting aging of equipment and facilities and the lack of smooth supply of consumables are common conditions, which are causing medical personnel to leave those hospitals and to seek jobs in other countries. Moreover, the absence of manpower is believed to repeat the vicious cycle of so-called “three-delays” model, which exacerbates the normal operation of hospitals.

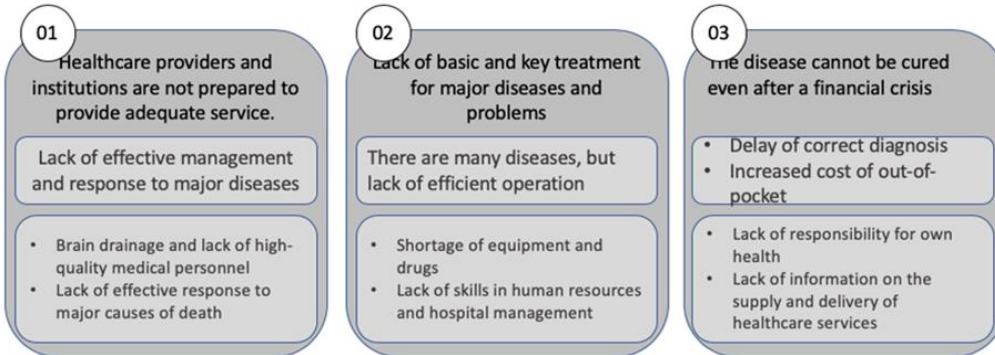
The direction of the affiliated hospital is to establish a general hospital faithful to basic medical care; it will therefore establish an exemplary examination and an diagnosis process. The standard treatment process is delivered to patients through evidence-based medical treatment. It should ensure the function of the hospital so that the hospital can develop and establish an environment for enhancing the competence of medical personnel.

In principle, the hospital's service is on its own. The environment in which graduates of medical schools can grow into effective professionals through normal courses and become the head of educational training, and the standards and examples of medical training should be established. Standard treatment should be carried out through evidence-based diagnosis and minimal examination, focusing on Kyrgyzstan's most common diseases and causes of death.

*Figure 19. Major Issues of Kyrgyzstan Healthcare*



The need for healthcare is not met satisfactory level even if a large amount of out-of-pocket is invested for financing.



### **General Plan**

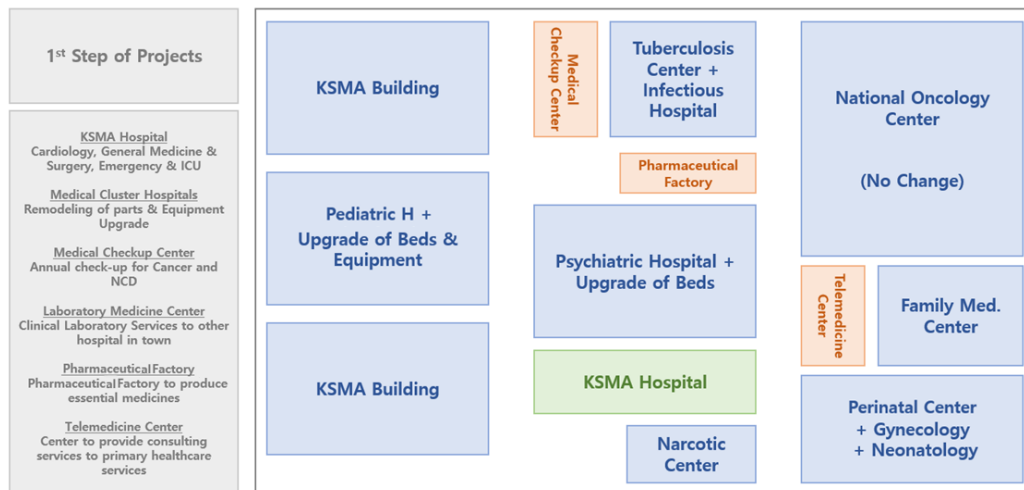
The project will holistically consider the requirements made by KSMA and the joint development model of KSMA as suggested by the MOH.

The project will introduce a new hospital with 300 beds, and will revamp wards that require urgent improvement in the National Psychiatric Hospital (50 beds), National Pediatric Hospital (50 beds), and Perinatal Hospital (30 beds for obstetrics, 40 beds for gynecology, 30 beds for newborns) located near the site. The project will include modern technology and will build a new pharmaceutical company, and an examination center to establish the phase 1 model of a telemedicine complex. The University hospital will strengthen its role of education and research by incorporating modern infrastructure for medical education and research.

The design of the hospital will aim to provide a patient-centric model by using the space and land effectively. Also, it will enable the interconnection of information and communication systems with nearby national hospitals to enhance the performance of smart digital complexes. The study specifies plans for the establishment of what would be the best national medical academy-affiliated hospital in Central Asia. It does this by

incorporating standards on par with those of certification for internationally accepted medical institution.

Figure 20. Establishment Plan of KSMA Hospital



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#### **4.3.2. India Rajasthan-Korea Medical Cluster Development PPP Project**

##### **Summary of the Project**

Rajasthan is seeking a sustainable and holistic solution to address the glaring healthcare needs of its State residents, namely in Reproductive & Child Health (RCH), in Rare Diseases and Disorders(RDD), and in Non-Communicable Diseases (NCD).

Both the Government of India and the Government of Rajasthan have shown significant interest in developing local and national healthcare sectors. When combined with Korean Consortium's experience in providing advisory services for, and development of healthcare technology and healthcare policies, it is suggested that a Bio-Medical Cluster in Rajasthan provide direct solutions for the state's healthcare issues. This Cluster would empower national healthcare and national welfare by reducing mortality and the incidence of diseases/disorders. It would do these while increasing patient care and while providing training & education. It would also serve to refresh the local and national healthcare experience with new, efficient technology and effective administration. The Cluster would thereby further add to the national and state vision of establishing a competitive healthcare role model.

Project execution is expected to take approximately 36 months once Project Structuring is completed, following a Feasibility Study which would take approximately

6 months. Total project cost is estimated to be approx. USD 1 Billion (including Feasibility Study cost of USD 3 Million).

The project, when executed, will take place on a site of 150-250 acres as designated by and provided by the Rajasthani government.

The project will create a single integrated Rajasthan-Korea Bio-Medical Zone with a 1,000 beds hospital and with a laboratory diagnostic center. This Bio-Medical Zone will act as the central pillar of biomedical infrastructure and biomedical business sites for India nationwide, and through Korean products from Korean companies. Accordingly, this project will help accomplish the “Make In India” vision for manufacturing medical equipment and consumables using high-quality Korean technology and experience brought to India.

For the scopes of the feasibility study, a consulting session with Korean Healthcare Group in Project O&M will be undertaken. In doing so, a Korean technology-based Manufacturing Complex will be created to supply equipment, parts, training centers, safety management and a medical data center.

The University Hospital will become the core of the cluster development. All the healthcare related facilities emerge from the needs of the hospital. Following the University Hospital development, the R&D center and the Educational Institute will be developed along with the Commercial Laboratory, the Mega Blood Bank, Pharmaceutical Manufacturing and Medical Device Manufacturing in the next step.

### **Background of the Project**

- India has brought about changes in the environment such as continuous population growth, economic growth, income gap between urban and rural areas, and urban population growth. As a result, the disease feature has changed, infectious diseases have

decreased, and chronic diseases with high medical costs have increased rapidly. Especially, incidence of hypertension and diabetes are the highest among NCD in both India and Rajasthan while heart disease is the leading cause of death.

- The major policies launched in India include National Health Policy, National Health Program and National Health Mission which are to highlight on shifting from selective to comprehensive health care at the health centers; to control & eradicate communicable disease and improve environmental sanitation, nutrition and rural health condition; and to strengthen health system in rural and urban areas, respectively. The State Government of Rajasthan has developed their own healthcare policies, like state health programs and Health Vision 2025 to tackle communicable and non-communicable diseases which are major causes of disease burden.

- The main problems of the health and medical sector in India include absolute shortage of medical professional, poor facilities and lack of beds, long waiting times, and lower quality medical services in public medical institutions, which increase dependence on private medical institutions, and the high cost of private medical institutions has become a major obstacle to ensure the necessary medical services at the right time, leading to a vicious cycle of medical services.

- The Indian and State Government has been developing and launching legal acts and standards for each sector related to healthcare, such as hospital, medical education institutions, R&D center, diagnostic lab, blood bank, medical device and pharmaceuticals and HIS to regulate and standardize delivery of healthcare and strengthen quality of education and healthcare system.

- The Indian government is gradually expanding the size of its low-level health budget to address these health care issue and is promoting various policies to ease the burden of medical expenses on low-income households and increase their health care

coverage. Also, schemes for medical devices and pharmaceutical manufacturing are being approved by the government to support start-up manufacturing companies and build new infrastructure for their partnership in the arranged states or parks.

- Recently, the Indian government has been pushing for policies such as the establishment of medical colleges in each district hospital, upgrading facilities and setting up specialized hospitals by state to train medical personnel, improve medical facilities and expand beds. The project is also recommended by the Public Private Partnership approach due to the limitations of government finances.

- Given these health and medical conditions, it is highly necessary to build professional medical facilities with state-of-the-art medical equipment and facilities, as well as excellent medical personnel, medical institutions and research institute to provide adequate and high-quality medical services to Rajasthan residents.

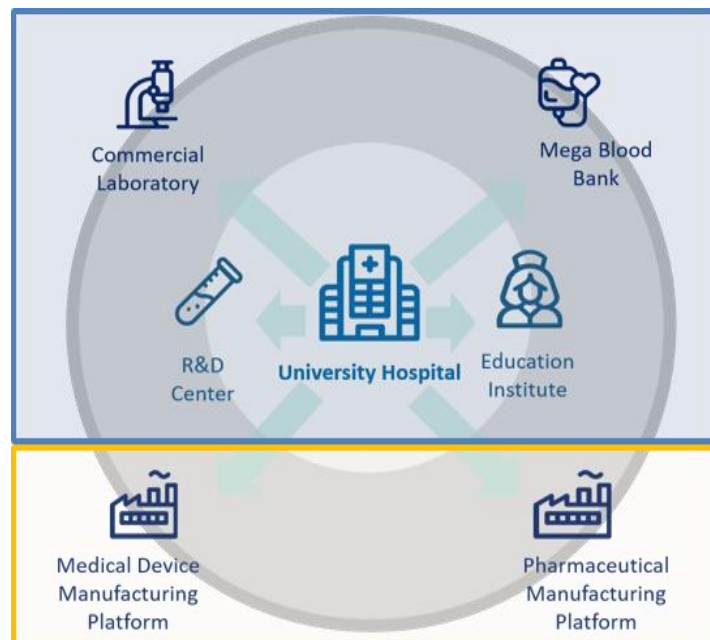
- In addition, it is necessary to devise measures to establish an infrastructure that can create a more effective supply base to properly respond to regional medical demand.

- There are four major chains of diagnostic laboratory across India to deliver diagnostic services in pathology and radiology and they have introduced international standardization with protocol sets to warrant consistent and high-class services to all patients. Also, innovation and new technologies, like AI and advanced testing methods, from private diagnostic laboratories has been initiated to improve quality of care and prevent from diseases. However, there are several challenges that they are facing during the new innovation, such as shortage of skilled professionals and high-capital cost of high-end equipment required for advanced test.

- As developing countries, Indian government is collaborating ICT with healthcare to strengthen the health sector by developing Integrated Health Information System, especially EHR for public hospitals. Because, there are many types of information system

which are being developed by IT companies for purpose of record, prevention, tracking and so on. The state government of Rajasthan also has started new e-health initiatives for enhancing healthcare system and quality of care in all citizens.

*Figure 21. Establishment Plan of India Rajasthan-Korea Medical Cluster*

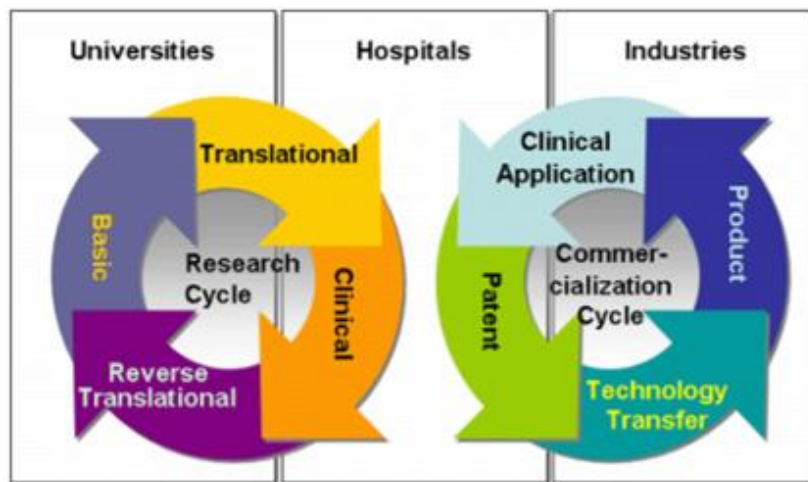


A Medical cluster combines the concepts of medical industry and cluster. A successful Medical cluster shall enable excellent human and material resources within hospitals for research and development and industrialization to be utilized to their maximum potential.

The strategy forms a closely linked value-chain (from basic research to commercialization) between industry and research centers to maximize effectiveness of existing hospitals.

In particular, the Medical cluster which shall be built around hospitals at the core of the biomedical industry to lead the advancement of the overall medical industry.

Figure 22. Hospital-centered Medical Cluster



### Location Brief

Rajasthan is situated in the northern part of India. It is the largest State in India by area, constituting 10.4% of the total geographical area. The State has 33 administrative unities divided into 241 districts and 237 subdistricts. (per 2001 Census)

Table 15. Table 1. Geographic Information of Rajasthan and India

Item	India	Rajasthan
Area	3,287,263 km <sup>2</sup> (CIA, 2019.2.)	342,239km <sup>2</sup> (Jaipur district 11,143)
Capital	New Delhi	Jaipur
Population	1,385,197,188	81,032,689 (Jaipur district 8.0 million)
Population growth	1%	2%
Population density	464 per km <sup>2</sup>	



Item	India	Rajasthan
Climate	Tropical monsoon, temperate climate, alpine climate, etc.	
Ethnic group	Arian (72%), Drabida (25%), etc.(3%)	
Religion	Hinduism (79.8%), Muslim (14.2%), etc. (6%)	
Language	Hindi, English and 21 others	
Urbanization rate	35.0%	
Fertility rate	2.24	
GDP nominal	USD 2,650,725 (2017)	
GDP Growth rate	6.68 % (2017)	
Currency / Exchange rate	INR (India Rupee) 1 USD = 74.5557 INR , 1 Euro 87.1941 INR (Nov. 21.2020))	
Inflation rate	7.66 % (2019)	
Government type	Republic	
Representative	<ul style="list-style-type: none"> <li>• President: Ram Nath Kovind</li> <li>• Prime minister: Narendra Modi</li> </ul>	<ul style="list-style-type: none"> <li>• Governor of a state: Kalraj Mishra</li> <li>• Head minister: Hon'ble Chief Minister, Shri Ashok Gehlot.</li> </ul>

Source: Census of India 2011 Data & Socio- Economic Fabric of Rajasthan State 2011

Rajasthan is primarily a rural society; over 75% of the population resides in rural areas. Nearly half of the population of the state is found in the eastern fertile Plain of Rajasthan which only takes up a quarter of Rajasthan's total land mass.

*Table 16. Demographic Statistics of Rajasthan and India*

Particulars	Rajasthan	India
Total Population (2018, WB)	77.1 M	1352.6 M
Sex Ratio ('11)	928	943
Urban Population ('11)	31.1%	34%

Urban Population	13.2 M	483 M
Rural Population	43.3 M	895M
Population Density (KM2, '11)	201	382
Literacy ('11)	66.1	73

Source: World Bank data, National Health Profile 2018, CBHI

Rajasthan is the third most invested area in India, after Maharashtra and Gujarat, reflecting its inherent climate advantages. Rajasthan's main economic drivers are agriculture, mining and, especially, tourism. It has been frequently reported that Rajasthan seeks to expand its luxury tour businesses to foster both local and national economic growth.

The government of India has greatly expanded its national health and medical plan and has provided various budget support measures to the State governments. The government of Rajasthan started its healthcare innovation by initiating its "Free Medicine Scheme" in 2011, and more recently launched "Ayushman Bharat – Mahatma Gandhi Rajasthan Swasthya Bima Yojana" in 2019, providing free health coverage for 107 million households across India (The Hindu Business Line, 2019).

Furthermore, the Indian government's intentions to develop Rajasthan as its central medical hub are made apparent from the government's recent involvements with Rajasthan in the sector. The government of Rajasthan has received approval from the Central Government to set up five new medical colleges in the state to ensure a sustainable supply of medical professionals, which reveals India's willingness to expand on producing and maintaining its output of healthcare personnel nationally. Also, Rajasthan has emerged as a role model state in the country in dealing with the recent COVID-19 crisis, which shows that Rajasthan pays to invest in health schemes and infrastructure. Owing to numerous initiatives from the state government, Rajasthan is well positioned to become known as a model state regarding public health services in India.

It is envisioned that there will be 5 main facilities in the Rajasthan Bio-Medical Cluster, including the University Hospital, a Commercial laboratory, the Mega Blood Bank and a Sustainable Medical Consumable Manufacturing Cluster. Each facility will have its own specialty and role within the cluster, details of which are provided in Table 17.

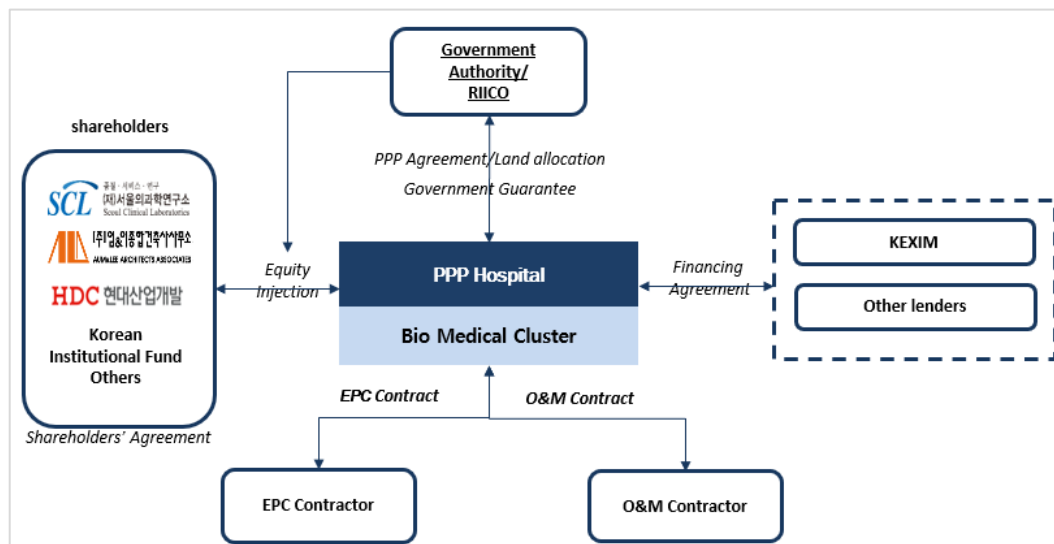
Table 17. Major Facilities

Facility	Description
<b>University Hospital</b>	<ul style="list-style-type: none"> <li>• 1,000 Beds University Hospital</li> <li>• Rajasthan Government Medical College combined with the hospital – in order to sustainably supply qualified medical professionals</li> <li>• Research Center</li> <li>• Specialties to meet the “Vision 2025” of Rajasthan Government and to support current Rajasthan health major issues</li> <li>• Mother and Child, Cardiovascular, Cancer, Rare Diseases, Trauma</li> </ul>
<b>Commercial Laboratory</b>	<ul style="list-style-type: none"> <li>• Provide overall efficiency of laboratory testing in the region, to implement international best practice reference laboratory processes and to set the benchmark for quality standards in the region</li> <li>• Research Center</li> <li>• Laboratory Testing (Genetics, Cardiovascular Disease, Infectious Diseases, Microbiology, etc.)</li> <li>• Laboratory Management</li> <li>• Occupational Health</li> <li>• Genetic Counseling (ABGC certified)</li> </ul>
<b>Mega Blood Bank</b>	<ul style="list-style-type: none"> <li>• Sustainably provide safe and effective blood to the region</li> <li>• Provide blood test in lower price by efficiency increase</li> <li>• Secure blood products (plasma, platelet, etc.) to develop ‘MAKE IN INDIA’ medicine</li> <li>• Collect blood information safety system (BISS) through the blood testing</li> </ul>
<b>Sustainable Medical Consumable</b>	<ul style="list-style-type: none"> <li>• Research and develop diagnostic kit suitable for Indian population</li> <li>• Manufacture developed products</li> </ul>

<b>Manufacturing Cluster</b>	<ul style="list-style-type: none"> <li>• Quality Control</li> </ul>
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The envisioned Project structure reflects a typical PPP contractual structure and needs to build the bankable provisions on the project documents to be developed, such as payment guarantee from the government. The Business clusters in the bio-medical complex will receive benefits from the PPP hospital in the center for their stable operation, respectively. For knowledge transfer, Rajasthan Government Medical College will be an operation partner with Korean hospital(s).

Figure 23. PPP Project Structure



- PPP Agreement shall be signed between the Project Company and Government Authorities (Ministry of Health & Family Welfare or Medical Education Department) in Rajasthan
- Implementation agreement and PPP agreement should provide for certain credit enhancements measures to make the project bankable and facilitate

the procurement of non-recourse financing

- The nature of these arrangements shall be discussed with MoH, MoF, related authorities and DIFs/lenders who are willing to participate in the Project.
- Key government entity/agency responsible for the following activities for the project,
  - Land allocation/provision: Land allocation authority would be Jaipur Development Authority
  - Bid evaluation: Transaction Advisor is appointed by the Administrative Department for support in the bid evaluation process.
  - Fee collection from private player: The Ministry of Health & Family Welfare or the Medical Education Department would be the government entities responsible for fee collection
  - Allocation of beds: The project proponent is open to propose the number/allocation of beds to the Ministry of Health & Family Welfare. However, the state government may have control over seat allocation in the university.
  - Payment by government: Payment guarantee is not provided by the government entities. However, it may be considered by the state government depending upon the scale of investment and the value creation for the people of Rajasthan

#### **Rajasthan Bio-Medical cluster Model settings**

- In this project, the basic concept of medical cluster comes from the Wonju Medical Cluster in Republic of Korea and it will be introduced as a suitable

form for the Indian context.

- In order to enable the project to succeed, it needs to attract super-specialized hospital, medical colleges, R&D center, pharmaceutical and equipment companies, operational personnel and students, and a hinterland city for customers who will use these facilities.
- By establishing and operating a super-specialty hospital, the hospital can accumulate the experience with patient treatment and collect the related data. Those experiences and the data are crucial to set a basis of researching new knowledge and new technologies for R&D center.
- The new knowledge and technologies derived from R&D center will enable to manufacture excellent pharmaceuticals and equipment, which will be directly applicable in the healthcare field, at the companies for pharmaceuticals and equipment.
- Clinical applications of such pharmaceuticals and equipment in the hospital will allow the hospital to provide better care for patients, and the R&D center and companies for pharmaceuticals and equipment will be able to get feedback on the new product based on the obtained outcomes from the hospital.
- For R&D center and companies for pharmaceuticals and equipment, Such feedback is very crucial assets and will be valuable resources for development in the future, also much better pharmaceuticals and equipment will be manufactured with reapplying the feedback.

- In addition, the medical colleges/ institution will be able to develop sustainably by training and supplying required professionals for super specialty hospital, R&D center, and related companies. Medical colleges/institution will be able to educate and train students in hospital and R&D center.
- As operating a cluster consisting of super specialty hospital, medical college/institution, R&D center, Companies for pharmaceuticals and equipment and others, it is not only geographically close but functionally linked to each other so that enable sustainable complement and development. However, such clusters are not achievable at once and a phased and progressive approach for development is required.

### **Strategies for Establishing a Medical Cluster**

For the success of the Medical cluster, basic research, clinical and application development should take place actively, centering on hospital, and the results should be linked to the medical industry. In addition, strategies such as training professionals, building infrastructure necessary to vitalize translational research, and strengthening cooperation among networks are necessary.

- 1) Training and supply of outstanding professionals ⇒ Establishing of specialized educational institution.
  - Establish education and training institutions to train and supply for medical professionals of hospital and strengthen R&D capabilities.
- 2) Strengthening translational research ⇒ Establishment of R&D center.
  - Supporting translational research and related infrastructure for

development of new health technology which available for clinical application on patient using outcomes of basic research.

- 3) Promoting of clinical application of new health technology ⇒ Establishment of super specialty hospital.
  - Developing a model for new health technology to enter the healthcare market.
- 4) Strengthening hospital-business partnership ⇒ Establishment of diagnostic laboratory, blood bank, medical device and pharmaceutical companies.
  - Extending mutual cooperation a research grant, and technology transfer to strengthen hospital-business partnership.
- 5) For unit projects in the cluster to interact and cooperate, a dedicated team and an organization are needed as well as a financial structure for hospitals.
- 6) Supporting the composition of dedicated management task force team to extend and invigorate the cluster networks.
- 7) Attracting healthcare industry financing to promote capital participation in hospitals and forming a separated dedicated team to promote venture firm financing in hospitals.

### **Goals of the Bio-Medical Cluster**

The Bio-Medical Cluster project in Rajasthan aims to create an innovative complex that adds value to the medical industry by forming a value chain to be shared between



hospital, medical institutions such as medical college, nursing college, research & development center and relevant industries.

The purpose of the project is to;

- establish a modern super specialty hospital specialized in the unfulfilled healthcare sector and medical college and medical research institute to provide residents high quality healthcare;
- train excellent medical personnel and research personnel based on the above-mentioned action;
- support the technological development and technological transfer by sharing the facilities and equipment of the R&D center with start-ups or related companies.
- create an ecosystem that promotes commercialization by linking it to related companies.

In the report, hospital is the final market for new health technology, medicines, and various equipment, as well as the center of the value-chain of the healthcare industry where discovers and applies the knowledge and technology and provides feedback on the results by advanced human resources, as the research center opens the R&D facilities it will promote the translational research of college-hospital-business.

Project can be expected to have the following impacts;

- Providing high-quality healthcare services to the community.
- Increasing employment for the community through a manufacturing base of high-tech medical products.
- Growth of related business and industries.
- Improvement of the health status of the overall community with increased awareness of healthcare and medical accessibility.

In addition, the project is in line with the Make in India and can contribute to the creation of smart medical cities by the Rajasthan government, and will serve as a foundation of leading bio-medical cluster development in Rajasthan based on cooperation of hospital; college; research center; related business; state government.

#### **4.3.3. Lesson Learned from my experiences**

Experience with project concept planning, master planning made me realize the importance of the recipient countries' commitment. I, as one of the planning members of the project design, wished to design the best for health delivery improvement of the recipient country, but without the collaboration of the recipient country making the best project design seems like dreaming.

Through the process of the initial planning and primary research, I have come to realize that having the correct information about the issue and situation is highly critical. Since all the planning starts from primary research of the medical demand of the country, the burden of disease of the country, top death causes, health insurance, etc., the correct measure of the factors is success factors to accurate demand forecasting. And since lots of PPP projects are initiated by the private sector, the objective of the project can be misled.

Also, healthcare PPP projects must have certain objectives that fit the unmet medical needs of the country, which can be quite difficult if the recipient country is a developing country since they are facing multiple levels of unmet medical needs. For example, most developed countries are almost only facing non-communicable diseases and very little amount of communicable disease which most of the treatment is already developed. But developing countries are facing on-going communicable diseases and also must prepare for soon-to-come non-communicable diseases. This is highly risky since private participators can select the targeting diseases which matches their interest and the good. This might seem to fit the urgent medical issue of the country but might not be the most urgent ones among the people who are suffering in the country. Thus, international

organizations' participation and monitoring are critical for the success of healthcare PPP projects in developing countries. International organizations and development banks, etc., have to step in those projects with 100% commitment and focus to minimize the risk that recipient country might face in the future, and also balance the profits of private sectors, to encourage other countries to participate in healthcare PPP projects.

Although healthcare PPP projects are highly risky, I still believe it can be highly motivating and encouraging for developing countries to step on the ladder of becoming a better country. As most people know, everyone needs to face certain challenges and difficulties to learn and grow. But if it contains risk, commitment can be the most important factor in the success of the learning. With the 100% commitment of the recipient country to use healthcare PPP projects to enhance its country's medical delivery and health status, and with the collaboration of highly skilled international organizations and development banks, the recipient country can step up in the healthcare area for their people.

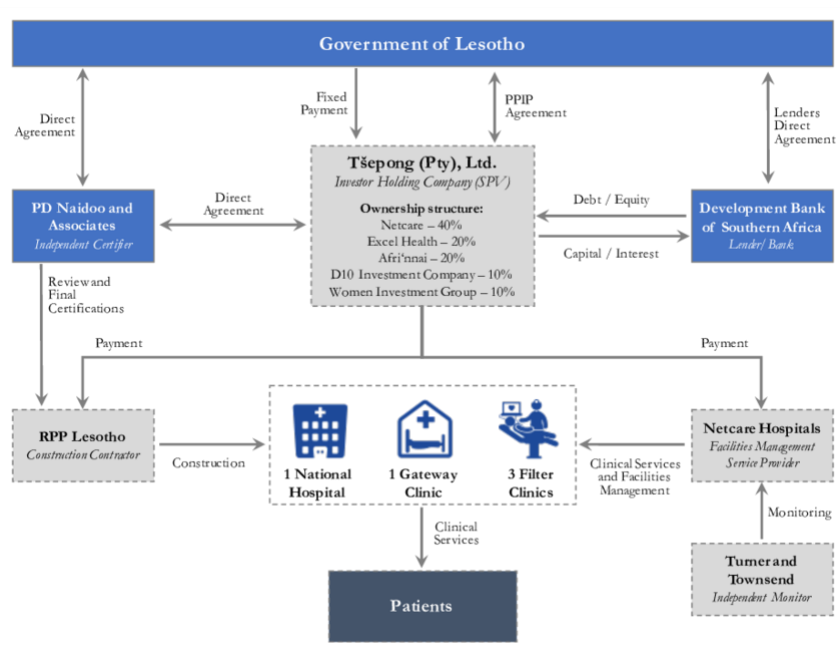
#### **4.4. Case Study: The Queen 'Mamohato PPP Hospital in Lesotho**

The only PPP build hospital in low-income countries, Queen Mamohato Memorial Hospital in Maseru, Lesotho, has been under criticisms because of its financial burden to the country's government.

When a visitor visits Queen Mamohato Memorial Hospital in Maseru, Lesotho's small capital city, she/he enters a building that is so strange considering it is this impoverished country of 2 million people surrounded by South Africa. Built at a cost of at least US\$100 million and operated under an 18-year contract between the Lesotho Ministry of Health and a consortium assembled by Netcare, the largest operator of private hospitals in South Africa and the UK. The hospital has 425 hospital beds with a extraordinary stylish architectural. Like Netcare's hospitals in South Africa, the Queen

Mamohato, which opened in 2011, is a spacious hospital with high-tech medical devices and patient-friendly lounges and wards. World Bank helped Lesotho negotiate financing for the construction of the hospital along with three feeder clinics. And the Mamohato project is as a model for public-private partnership (PPP) financing for health-care facilities and services in other low-income countries. It's a concept World Bank official currently promote in countries including Myanmar, Nigeria, and Tunisia (Vian T, 2016).

Figure 24. The setup of the Lesotho New Hospital PPP



Source: The Global Health Group & University of California, 2010

According Vian T, from his paper has listed clinicians at Queen Mamohato Memorial sing its praises. “It's a wonderful place to work” said Malikotsi Metsing, a Lesotho native who studied medicine in Australia and practised in South Africa before coming to work at the Queen Mamohato 2 years ago. Also stated “What attracted me is the quality of the facility, and the professionalism of the management”, she explained.

“Because of it, there is now a chance for young physicians from Lesotho to make careers for themselves at home.” (Vian T, 2016).

From Vian’s paper, also listed Metsing worked at Maseru's other hospital, the government-operated Queen Elizabeth II, which is housed in a dilapidated assembly of century-old shed-like structures in the city center. According to Metsing, “even just getting oxygen for patients was a struggle” at the 450-bed Queen Elizabeth, and making routine decisions about “simple issues such as the type of food suitable for babies” required layers of bureaucratic approval. On the maternity and pediatric wards, she recalled, overcrowding was endemic. There were no intensive-care facilities even remotely comparable to those at the Mamohato, she added.

*“Political mess”*

Those are criticisms that Lucy Mapota, the Queen Elizabeth's superintendent. The old hospital is a relic that was originally slated for closure when the Queen Mamahota opened. There are frequent shortages of drugs and medical supplies, she said. But problems such as these plague all the public health services in Lesotho. And many of the gaps in the country's public health fabric, Mapota believes, can be directly traced to payments from the Ministry of Health to the consortium assembled by Netcare and several Lesotho-owned businesses and provider-associations that won the Mamohato contract in a process stewarded by the World Bank's International Financial Corporation (IFC). “The cost of the new hospital is depriving the entire health system”, Mapota asserted bluntly. “It's a big political mess.” (Vian T, 2016)

The Ministry of Health's headquarters in Maseru echoes with similar complaints. Ntoetse Mofoka, who heads the Ministry's PPP unit, says payments to Netcare's consortium, which is known as Tsepong, have increased almost 80% since 2008, when Tsepong first contracted with the government to build and operate the hospital. “The rate of payment increase is scary”, she said.

Criticism of the project hospital contract with the Ministry started almost immediately after the project was first announced in 2008, says Lehlohonolo Chefa, director of the Consumers Association of Lesotho. According to Chefa, however, it wasn't until 2012, about a year after the hospital opened, that a change in Lesotho's Government led to public disclosure of the exact financial arrangements brokered with guidance from the World Bank's IFC. Under the terms of the contract, Lesotho's public learned, the consortium was to be paid a \$32.6 million index-linked annual unitary charge for up to a maximum of 20,000 inpatient admissions and 310 000 outpatient attendances (or about a third of Lesotho's total hospital demand). With this condition, the consortium was able to bill extra for each additional patient. As for the initial construction funds, the Government of Lesotho had contributed almost 40%, with almost 60% provided by the Development Bank of Southern Africa (which is owned by the Government of South Africa) and less than 4% provided by Netcare. "None of this should ever have been secret", said Chefa. "The contract should have been published as soon as it was finalized."

From Vian's paper has also indicated the IFC's opinion about Lesotho hospital's situation. Paul da Rita, head of the IFC's Global Health PPP Advisory, says the Lesotho project has proven instructive. IFC efforts to help the Government of Lesotho to manage the PPP contract were affected by high staff turnover, he suggested, which indicates that sustained efforts to develop local PPP contract management expertise are crucial. The project also revealed the need to engage in broad primary health system strengthening when delivering a secondary and tertiary care "island of excellence", he added, in an echo of Makhakhe's opinion. But the Boston University research team's findings reveal that "even in a very difficult environment, you can deliver good results", he said. (Vian T, 2016)

Other examples of successful IFC-assisted health PPPs in low-income and middle-income countries, says da Rita, include a project that provided three diagnostic imaging

clinics in the Indian state of Andhra Pradesh, and the Hospital do Subúrbio in Brazil's Bahia state. “In the right context”, he noted, health PPPs in developing countries “are part of the toolkit of options” to finance projects. “But we recognize that they don't always work, and that we have to be careful about assessing each project on its own merits.”

A consensus statement issued at the outcome of the UN's Third International Conference on Financing for Development in Addis Ababa, Ethiopia in July, arrived at a similarly cautious endorsement for PPPs such as Lesotho's. “Projects involving blended finance, including public–private partnerships, should share risks and reward fairly, include clear accountability mechanisms and meet social and environmental standards”, the statement reads. (Webster, 2015)

#### **4.4.1. Lessons learned from the Lesotho New Hospital PPP project**

The excessive cost of the government has to handle for the benefits that it got from the project is caused by few critical points, excess demand, cost escalations during preferred bidder stage, patient referrals to Bloemfontein, late payment charges and default penalties. (Vian T, 2016)

But among the all, the most meaningful lesson that we've learned is that demand forecasting is the key for the whole project. Forecasting the right demand is crucial for the future success and sustainability of any infrastructure project. Given the great proportion of OPEX to the total lifetime cost in health infrastructure projects, however, making a reliable estimate about future demand becomes even more important. While PPP project planners generally overestimate the demand for an infrastructure asset, it the opposite was the case for the Lesotho New Hospital PPP. The public and private parties considerably underestimated the future need for the health complex, thereby significantly increasing the total cost billed by Tšepong as a result of excess payments. Future PPIP projects in developing countries can learn from the Lesotho case: Demand forecasting during the preparation phase of a PPIP project is one of the most important tasks for the

project’s success. Though being a complex and resource intensive undertaking – which is intensified in low-income regions around the world – it does pay off in the long run and it is equally important for both the public and private party involved. In cases where the government does not have sufficient expertise and resources to determine the future demand, independent advisors with substantial regional expertise, might be best suited for the task.

Moreover, in order to alleviate the burden of incorrect demand forecasts, governments should consider deriving an exhaustive list of multiple possible scenarios to guard the PPIP undertaking from unwanted outcomes. For this purpose, any scenario has to trigger specific pre-negotiated contract clauses such as the amount of the unitary service payment billable or changes in the required performance indicators.

*Table 18. Overview of projected excess demand payment in 2012*

<b>Item</b>	<b>Inpatients</b>	<b>Outpatients</b>
Actual patients treated	23,341	374,669
Contractually specified service level	20,000	310,000
Number of patients in excess	3,341	64,669
Cost per patient in excess	M 12,263.05	M 73.64
Projected excess payment	M 40,970,850	M 4,762,225
<b>Total Projected Excess Payment</b>	<b>M 45,733,075</b>	

Source: Vian et al., 2013

## **V. Discussion & Conclusion**

### **5.1. Discussion of the Study**

As healthcare PPP projects in developing countries aren’t an easy task nor a general one, currently there is only one integrated model that is operating. Therefore, there is a very limited real-life case study that is possible to consider for the study. Instead, lots of



PPP projects in developing countries in other types of infrastructure are being cited and considered for the study, but still, it must be considered the difference between healthcare PPP projects and that of other types of infrastructure projects.

The findings of the study are the results from experiences of PPP projects in developing countries, personal experiences from developing healthcare PPP projects in developing countries, and the one and only healthcare PPP project in a developing country. Since the study is limited to “PPP”, “Healthcare” and “Developing country”, there were not many other studies that match the study that I was conducting. But there were plenty of studies that satisfy two of three criteria, there were studies chosen with their credibility of the resource. I believe as developing countries start to realize the possibility of capability enhancement through PPP projects, which adapting to advanced medical technology and healthcare delivery of developed countries, there will be lot more healthcare PPP projects in developing countries. And as the number grows, there will be a more mature attitude with the collaboration which is expected to bring better health delivery to the developing countries.

Literature review and case study is used research method for this study, which can be enhanced with qualitative interviews with the experts who are working in the field. But since Korea has no experience with healthcare PPP projects in developing countries, there were no experts who I can interview. But I believe within the near future, there will be an expert who is highly committed and focused in the area, which can give better insights about the study.

## **5.2. Conclusion**

*PPP should be an option for health infrastructure development for developing countries, but what should be priorly considered to Korean Private Sectors and Korean Government?*

PPP in developing countries is like socialism or communism. In theory, it seems perfect. But to realize that theory into reality, through the process the theory collapse. As Lesotho's PPP projects have left a substantial amount of questions about the effectiveness of PPP,

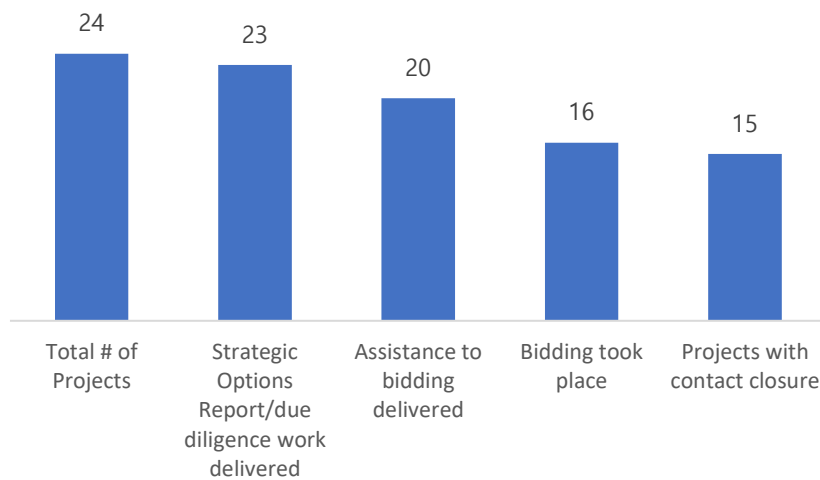
But also, PPP in healthcare does show the significant difference that it creates. The projects indicate good results with regard to access and quality of services. Three out of the four projects show evidence that access has increased compared to the baselines. In one case, the PPP project delivered significantly more services and higher quality in the first year of operation than at baseline. The number of admissions increased 51 percent, outpatient visits more than doubled, and the hospital and filter clinics assisted 45 percent more deliveries than the baseline. The second project provided services for 170,000 compared to a target of 74,000. The third project caters to 11 percent of the total number of hospitalizations versus a baseline of 8.5 percent. In addition, prior to the establishment of the hospital, the people in the area used to travel 22 km for treatment of more complex health complaints. Project quality and performance targets were generally achieved.

### **5.2.1. Condition 1: Prioritize Countries to Build Partnerships**

From various studies, it was clear that differences between the countries do become a huge difficulty during the process. PPPs may be deployed to address specific health services as one of a country's policy options. PPPs often address health needs that – given the deficiencies in a country's health system- appear peripheral.

Even the World Bank Group, 63% of all IFC Advisory Services (AS) mandates reached contract closure. Looking at the health PPP Project cycle, Phase 1 was completed in 96% of all mandates, 83% of all mandates proceeded to tender with support from IFC AS, bids were received in 67% of all mandates, and 63% of all mandates proceeded to commercial closure.

*Figure 25. IFC Advisory Success along the Health PPP Delivery Chain*

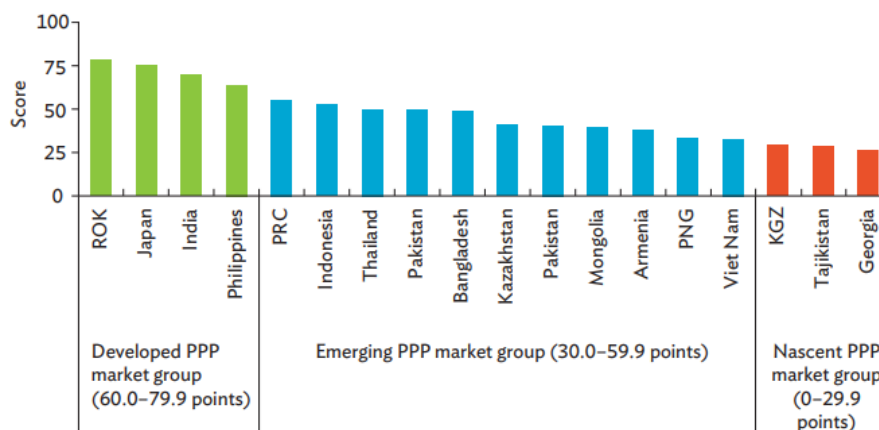


Source: IEG, Project Completion Reports

- Government's PPP policy options availability
- Countries that has reached a specific level of maturity (The World Bank Group supports health PPP projects in 76 countries, that already reached maturity level regarding managing PPPs)

The Economist Intelligence Unit (EIU) classifies countries with regard to PPP maturity according to a standardized procedure: “Nascent” countries are those with the least developed enabling environment; “emerging” are those where the enabling environment is under construction and less tested; and “mature” PPP countries are those that already have a quite well-established enabling environment.

*Figure 26. Readiness Scores in Asia and the Pacific, 2014*



Source: Economist Intelligence Unit, 2014

- **Prioritize Asian Countries** to lessen the resistance from healthcare staff, culture differences, etc.
- **Prioritize Countries that has similar healthcare delivery system as that of Korea**

### 5.2.2. Condition 2: Secure Evidence of Partner Country's Commitment

Through three project participation of the author's experience, and various reports have stated that commitment of partner country is the essential success factor of the project. From the author's experience, Expression of Letter (EOI), or Letter of Interest (LOI) is not enough to prove its commitment to the project.

The best way to secure the commitment of the partner country is for the country to request the qualifications of a certain healthcare facility or healthcare services. For example, the National Center of Privatization & PPP of Saudi Arabia has shared its "Ministry of Health Request For Qualifications in Al Ansar Hospital in Al-Madinah Al Munawwara Project" which the government took the first step of the PPP project.

The second-best way is requiring the partner country to organize a Project Management Unit (PMU) or Partner Unit to proceed with each process of the project.

Through proceeding pre-feasibility study, feasibility study, consulting process from a project, collaboration with partner country is essential. Since the information on the website may be different from reality, the project needs a leading entity to confirm the background research. Through the close collaboration of the public and the private, thus it is possible to make the most expected project design.

As from the World Bank Group, among projects that led to contract closure, the largest success factor are project design and government commitment. Project design factors were cited in 76 percent of the successful cases, followed by government commitment, found to be a success factor in 72 percent of the projects. An important aspect of success is the willingness or the capacity of governments to undertake PPPs. Similarly, government capacity or commitment is the main reason PPPs do not pass from the options report stage to the bidding assistance stage.

Three projects exemplify the importance of government decision-making and commitment to the success of PPPs. In the first example, the government decided not to proceed with the PPP models presented by the IFC AS. The Project Completion Report for the project indicates that "the problem lay in the inability of the decision-maker to fully grasp and implement the core PPP Principle, which is the financial interaction between the private operation and the state budget...." In the second example, the government stopped the project even before reading the PSP plan because there was insufficient support in the country for the proposed reform. In the last example, the bidding process was canceled not by the ministry of health, but by the ministry of finance. A meeting set up with the minister of health to try to resolve the problem was canceled by the government. IFC tried but was never able to confirm interest in pursuing the project from the new ministries of health and finance, and after having the project on hold for five semesters, IFC decided to terminate it, following a change in government.

A 63 percent share of PPP advisory mandates reaching commercial closure should not be interpreted as low. First, success depends, as shown, to an overwhelming extent on external factors, mainly government commitment or the availability of a champion. Second, a relatively lower share of PPP mandates reaching commercial closure compared to those initiated can also be interpreted as IFC AS “pushing the envelope;” that is, IFC is trying to bring PPP structures to countries with a relatively low PPP track record—a potential indication of the pioneering nature of IFC’s support. However, this needs to be viewed in context, because governments in nascent countries are likely to lack the capacity and skills to structure and manage PPP contracts in a way that safeguards the public interest. Because evidence is slim on the effects of PPPs beyond closure, particularly on their contribution to the Twin Goals and serving the poor, the verdict on their role in bringing services to poor countries is still out.

### **5.2.3. Condition 3: Testify the Project Design through Multiple Steps**

Although World Bank Group advised proceeding with two stages for private health care facility establishment, from my experiences another consulting stage is essential. Forecasting the right demand is crucial for the future success and sustainability of any infrastructure project. Given the great proportion of OPEX to the total lifetime cost in health infrastructure projects, however, making a reliable estimate about future demand becomes even more important. While PPP project planners generally overestimate the demand for an infrastructure asset, the opposite was the case for the Lesotho New Hospital PPP. The public and private parties considerably underestimated the future need for the health complex, thereby significantly increasing the total cost billed by Tšepong as a result of excess payments.

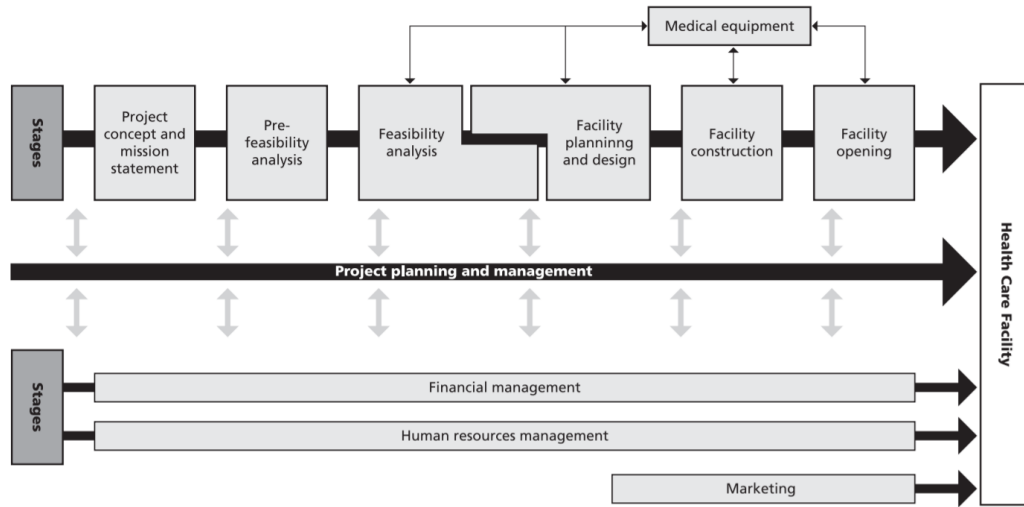
PPP projects in developing countries need to learn from the Lesotho case: Demand forecasting during the preparation phase of a PPP project is one of the most important tasks for the project’s success. Though being a complex and resource-intensive undertaking – which is intensified in low-income regions around the world – it does pay

off in the long run and it is equally important for both the public and private party involved. In cases where the government does not have enough expertise and resources to determine the future demand, independent advisors with substantial regional expertise might be best suited for the task. Moreover, in order to alleviate the burden of incorrect demand forecasts, governments should consider deriving an exhaustive list of multiple possible scenarios to guard the PPP undertaking against unwanted outcomes. For this purpose, any scenario has to trigger specific pre-negotiated contract clauses such as the amount of the unitary service payment billable or changes in the required performance indicators.

A pre-feasibility analysis is a broad assessment of whether or not it is possible for your hospital to be built and operated the way you and your partners envision. Among other things, it seeks to uncover major risks that could seriously affect the project. Put another way, a pre-feasibility analysis tests your project's viability at an early stage. If the analysis identifies a major risk that probably cannot be overcome or that would cost too much to mitigate or manage, you and your partners will be able to avoid spending valuable time and money pursuing an unworkable project.

If the pre-feasibility analysis indicates that the project can be viable and you decide to move forward, the next step is to conduct a detailed feasibility analysis. This examines the details of the plan throughout the facility's construction and subsequent daily operation. It should develop the specifics of how to construct and operate the hospital so as to ensure the project's feasibility and viability. You will identify and analyze the full range of risks, large and small, and determine the best ways to minimize them. In the course of the feasibility analysis, you will probably discover numerous risks that did not come to your attention during the pre-feasibility stage.

*Figure 27. Project Management: Establishing a Private Health Care Facility*



Source: World Bank, 2017



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