TRIP REPORT

BHUTAN VISIT, JULY 21 – 26, 2019

Prepared by:

Hitotsubashi Institute for Advanced Study (HIAS), Hitotsubashi University, Japan and the Health Intervention and Technology Assessment Program (HITAP), Ministry of Public Health, Thailand

Mission:	**Dates of Travel:**
Bhutan Visit, July 21 – 26, 2019	July 21 – 26, 2019

Prepared by:

Hitotsubashi University & Health Intervention and Technology Assessment Program (HITAP) Research Teams

Submitted to:

Japan International Cooperation Agency (JICA) and the International Decision Support Initiative (iDSI)

Objectives of travel:

- To learn about the health care system and the current situation in Bhutan
- To prepare for research on quantifying the cost-effectiveness threshold in Bhutan
- To discuss the potential research collaboration on the social cost of alcohol consumption in Bhutan

Members of mission/Delegates:

Mudai Suzuki (JICA), Ryota Nakamura (Hitotsubashi University), Ying Yao (Hitotsubashi University), Saudamini Dabak (HITAP), and Waranya Rattanavipapong (HITAP)

Program:

July 21, 2019	Visit JICA Bhutan Office and Paro Hospital
July 22, 2019	• Courtesy Call to Health Secretary and Director-General, Department of Medical Services, Ministry of Health (MoH) • Lecture on HTA at MoH • Visit UNICEF • Visit PAEKAR Diagnostic Centre, Thimphu
July 23, 2019	Visit Royal Centre for Disease Control, Jigme Dorji Wangchuck National Referral Hospital, Gyaltsuen Jetsun Pema Wangchuck Mother and Child Hospital, Bhutan Health Trust Fund, and Department of National Budget, Ministry of Finance
July 24, 2019	Visit Dechen Choling Basic Health Unit Grade 1, National Traditional Medicine Hospital, and WHO Country Office
July 25, 2019	• Courtesy Call to Health Minister • Visit Khesar Gyalpo University of Medical Sciences of Bhutan, Asian Development Bank (ADB) office, and Gidakom hospital
July 26, 2019	Visit MoH, Changiji Satellite Clinic in Thimphu, and Hongtsho Basic Health Unit Grade 2

Contents

Key observations and suggested areas for research

About Bhutan

- Bhutan is a country nestled in the Himalayas with a population of 798,000 (WHO, 2016) and income per capita of USD 3,080 or USD 9,680 in international dollars (World Development Indicators, 2018). It is a land-locked country and has borders with China and India.
- Stewardship for the economy is provided by the Gross National Happiness (GNH) Commission, which serves as the planning body. Bhutan is currently implementing its Twelfth Five Year Plan (July 2018 – June 2023).
- Administratively, there are 20 districts or *dzongkhags* in Bhutan, under which are urban municipalities or *thromdes* and rural blocks or *geoks*. Broadly, there are three regions in Bhutan: western, central, and eastern.

Bhutan health system

- The Bhutanese health system is a three-tiered, centralized, and well-functioning system. The primary health care system comprises Basic Health Units (BHUs), Grades I and II; district hospitals; two regional referral hospitals; and one national referral hospital, Jigme Dorji Wangchuck National Referral Hospital (JDWNRH), in Thimphu. Patients who cannot be treated domestically are referred to facilities overseas, which is managed by JDWNRH.
- Bhutan has committed to "provide free access to basic public health services in both modern and traditional medicines" (Article 9 of the Constitution). As a result, the government provides free health services to its people and visitors.
- The Ministry of Health (MoH) is the main provider of healthcare. It is headed by the Minister of Health followed by the Secretary who is supported by the Director Generals of departments. There are four departments in the Ministry: Department of Medical Services, Department of Public Health, Department of Medical Supplies and Health Infrastructure, Department of Services, and Department of Traditional Medicines. Under each department are divisions. Hospitals have Annual Performance Agreements (MoH) to monitor performance. It aspires for Bhutan to be "A National with the best Health."
- Bhutan spends about 3.6% of its Gross Domestic Product (GDP) of which close to 80% is paid for by the government. The Bhutan Health Trust Fund (BHTF) is one of the significant

institutions supporting healthcare and was set up by Royal Charter. It funds the drugs on the National Essential Medicines List (EML) and as well a portion of the costs for vaccines. The BHTF was initially supported by development partners and is funded by contributions by formal sector employees. The BHTF requests employees in the formal sector to contribute 1% of their salaries to the Fund. This arrangement can be seen as a partial introduction of a social insurance scheme, based on ability-to-pay contributions, to the primary health care system.

- The EML includes drugs and other interventions that have been approved to be used in the health system and stocked in each health facility. The health system does not necessarily preclude the use of other non-listed drugs, which may either be paid for by patients out-of-pocket or may be prescribed with a special arrangement called "named patient medicine." Inclusion of new drugs and technologies into the list needs approval by the HTA Panel of the MoH, informed by cost-effectiveness investigation and other scientific assessment.
- There are projects and plans to develop new hospitals and infrastructure, which account for the largest proportion of the country's health budget. The healthcare system of Bhutan appears to be hospital-centered. Many patients prefer to receive healthcare at large hospitals, and some of them bypass the health facilities at the primary healthcare level. Traditional medicine is offered at several health facilities and there is a national hospital dedicated to its practice. There is virtually no private sector in Bhutan with only a few diagnostic centres operating in Thimphu and the southern part of the country. Diagnostic centres cannot provide curative care.
- Bhutan's health system is confronting several challenges. The biggest challenge is the overseas referrals because the government has to bear all the cost of treatment. The congested national hospital is also challenging. Several clinics and units have been set up to solve this problem. Further, pharmaceutical procurement and supplies are subject to the country's market size and limited bargaining power. Still, financial sustainability of the current health care system is crucial as health care cost continues to rise due to the increasing burden of non-communicable diseases, the growing expectation of population, and advancement of medical technology. As Bhutan's economy grows, international donors will provide less support.
- There is a high level of political commitment towards the health sector in the current government, often referred to as a "healthy government" as the Prime Minister and many members of his cabinet have a health background. The Health Bill is currently under

discussion and there is an emphasis on integrating health with the other sectors of the economy.

Role of health technology assessment (HTA) in Bhutan

- The MoH, Bhutan is planning to conduct a health technology assessment (HTA) to support evidence-informed decision-making. The Essential Medicine & Technology Division (EMTD), Department of Medical Services, is the body responsible for conducting HTA.
- The EMTD is planning to conduct a study to determine a cost-effectiveness threshold for Bhutan, with Hitotsubashi University and in collaboration with the Health Intervention and Technology Assessment Program (HITAP), Ministry of Public Health, Thailand. In parallel, the Policy Planning Division, Office of the Secretariat, approached HITAP to support a study on the social and economic cost of alcohol in Bhutan. HITAP has long been collaborated with the MoH in providing technical support for economic evaluation and facilitating mutual communication. The initiatives include an economic evaluation of a pilot of the WHO Package of Essential Non-communicable (PEN) in 2014, hosting interns from the MoH Bhutan, helping develop the process guidelines for HTA, and economic evaluation of the pneumococcal conjugate vaccine and rotavirus vaccine. HITAP, the EMTD, and Hitotsubashi University are connected through a regional network of HTA agencies – HTAsiaLink.
- Higher-level officials at MoH, Bhutan, i.e. the Health Minister and Health Secretary perceive the importance of HTA in prioritizing healthcare services and assisting decision-making. They are supportive of the collaboration on HTA between MoH, JICA, Hitotsubashi University, and HITAP.
- Using HTA can help control the rapid growth of health care spending and maintain the development of the health system. Defining a reasonable threshold for cost-effectiveness is critical to determining which interventions should be supported by the government. The cost-effectiveness threshold study, or an estimation of the health opportunity cost for Bhutan, is to inform the essential medicine and intervention list (including vaccine programs). It may not necessarily directly inform international patient referrals and "named patient medicine" schemes. The study may nevertheless inform health opportunity cost of funding the schemes, i.e., health gains that could have been gained if the budget was spent on, say, primary health care domestically.
- Harmful alcohol use and its care are top health policy agenda in Bhutan. An accurate estimate of the economic and social cost of alcohol consumption will provide a basis for

policy interventions, such as implementing tax and regulations in the alcohol market and adaption of new therapies for alcoholics in the healthcare sector.

- One of the interventions to stem the tide of increasing alcohol consumption that was discussed with representatives from the Ministry of Finance and MoH was introducing an alcohol tax (a sin tax) to partially finance the free healthcare system. Although international evidence shows that tax is a strong measure to reduce excessive alcohol consumption, it may not necessarily be so effective in Bhutan's specific context. Local alcohol beverage, ara, which is relatively high in ethanol than other alcohol products, is popular and is largely home-brewed and consumed off the market. The tax may reduce the consumption of beer and other alcohol products that are in the market, but it may indirectly encourage people to increase Ara consumption through substitution. If so, even though the tax will raise some revenue, the tax could increase the number of alcohol-related patients and social problems.
- Potential data sources were identified for the two HTA studies. The MoH publishes the Annual Health Bulletins, available from the year 2000 online, which provides the official health statistics. These include hospital administrative data that is available in electronic format, the cost database at the national level, and national health surveys.

Summary of the mission

The Ministry of Health (MoH), Bhutan has developed a health technology assessment (HTA) program in Bhutan since 2013 and has continued its efforts to build HTA capacity and maintain its momentum. This year, the MoH shows interest and is seeking support on:

- Cost-effectiveness threshold led by the Essential Medicine & Technology Division (EMTD), Department of Medical Services
- The social cost of alcohol consumption lead by Policy Planning Division (PPD), Office of the Secretary

In order to explore potential collaboration, a joint mission comprising representatives from the Japan International Cooperation Agency (JICA), Hitotsubashi University, Japan and Health Intervention and Technology Assessment Program (HITAP), Ministry of Public Health, Thailand was carried out between July 21-26, 2019. The trip was aimed to be a scoping visit to learn about the health care system and the current situation in the country, to discuss the potential collaboration and explore the feasibility and data availability on HTA studies. The visit provided an opportunity for delegates to meet high-level officials at MoH, visit health facilities of all tiers and key partners (both local and international) in healthcare in Bhutan. This allowed the delegates to understand the country's context and better support the MoH in strengthening capacity for HTA.

The report is structured into sections according to the sites of the visit.

Paro District Hospital

Bhutan has a three-tiered, centralized health care system: basic health units (BHUs) at the primary care level, district hospitals at the secondary level, and regional and referral hospitals at tertiary level. BHUs and district hospitals cover 90% of the population living within 3-hour walking distance. Paro District hospital is at the second level, providing primary care and functioning as a referral center for BHUs and tertiary hospitals. It has outpatient and inpatient services, laboratory unit, dental department, pharmacy, and

emergency department. Health facilities open from 9 am to 3 pm on weekdays. Domestic and foreign people have access to free health care services. Some patients are willing to pay a marginal cost for private cabins.

Health facilities are under the control of the MoH, which is responsible for the allocation of facilities, human resources, procurement of drugs and equipment, and budget planning. The budget planning is largely based on activities (prescription, care provision) in the previous fiscal year (with 10% buffer). District hospitals have been granted power to allocate budget and resources to BHUs. They are also obliged to collect disease information from BHUs and report to the MoH every month or the Royal Center for Disease Control upon detection. The healthcare budget allocation between central and district governments was 70:30, but now it is 50:50.

Paro has just launched a pilot electronic reporting system, which is expected to be rolled out across the country. These records or statistics are used for health planning of the next fiscal year (July 1 – June 30).

In the current arrangement, if a new drug is introduced (very likely at the tertiary care level), it will not affect the budget for primary and secondary healthcare. The additional cost of introducing new drugs is currently funded by international donors, who are likely to leave the country in the near future as Bhutan's economy has grown. The health opportunity cost may have to fall into other sectors, such as environment, education, and military service.



Lecture on HTA at the Ministry of Health (MoH)

A lecture session on HTA was held at the MoH and was presided by Dr. Pandup Tshering, Director General, Department of Medical Services, and Mr. Kozo Watanabe, Chief Representative, JICA Bhutan Office. Ryota Nakamura and Waranya Rattanavipapong gave presentations on health technology assessment (HTA) in Japan and Thailand and addressed the importance of conducting HTA within the country context. With the increasing demand for advanced health technologies and constraints on healthcare budgets, the importance of HTA emerges. Policymakers have to set priorities and allocate resource efficiently. This resulted in the implementation of HTA to informed decision making in many countries including Japan and Thailand.

In introducing HTA and drawing on the experience of Japan, Ryota Nakamura highlighted that it is crucial for accountability as well as the sustainability of decisions for healthcare. He explained the need for having a threshold for assessing the cost-effectiveness of new interventions that have been planned to be included in the package. The threshold which has been defined in many settings to provides the benchmark information to make decisions but is often not based on evidence. For example, the US uses $150,000 per quality-adjusted life year or QALY, while Japan uses $50,000 to $100,000 per QALY to assess whether an intervention is cost-effective. The threshold in Bhutan has not yet been defined. Ryota Nakamura shared the concept of “health opportunity cost” that can be used to identify the threshold. Health opportunity cost refers to health gains that could have been gained if the resource was allocated elsewhere using Bhutanese funds. As per a recent study for the National Institute for Care and Excellence (NICE) in England, this is equivalent to estimating the marginal productivity of the total

healthcare system. The key data requirements for estimating the opportunity cost are health budgeting data to measure public healthcare expenditure, as well as population health outcomes data, including morbidity and mortality, for constructing (quasi-) disability-adjusted life years (DALYs).

Waranya Rattanavipapong presented on the role of HTA in Thailand, where it has been incorporated in the process of developing the benefits package for both, the pharmaceutical and non-pharmaceutical interventions, since 2008. Budget impact and feasibility analyses are also important to consider. She gave the example of including treatment of chronic Hepatitis C in the benefits package, for which an HTA was conducted, and the analysis was used to successfully negotiate prices with the manufacturer. In addition, she shared the experience of collaboration between MoH and HITAP on HTA through the International Decision Support Initiative (iDSI). The collaborative activities have included study visits, training, other capacity building, and networking activities. This collaboration has resulted in several outputs such as HTA guideline, membership of HTAsiaLink (a network of HTA agencies in Asia), and three HTA studies (screening of diabetes and hypertension, Pneumococcal conjugate vaccine, and Rotavirus vaccine). The HTA on Pneumococcal conjugate vaccine (PCV) resulted in the launch of PCV in Bhutan on June 4, 2018.

The audience raised many questions to the presenters, and enthusiastically discussed the necessity and urgency of establishing a practical implementation process for HTA in Bhutan. Issues raised were on the unique system in Bhutan where referrals are made to health centres outside the country, usually to India, the cost for which is borne by the government. This led to a question on how to define “basic free health services” as mandated by the Constitution of the country. In terms of the milestones of developing the HTA system, a political commitment was identified as a major factor in facilitating the process as well as the involvement of various stakeholders. Price negotiation was an area of interest by participants and the role of the Thai Food and Drugs Agency (FDA), which is analogous to the Bhutanese Drugs Regulatory Authority. In this context, the challenge of the procurement system was raised whereby rules require purchase from the lowest bidder, and the country has limited bargaining power due to its size. These issues pose a challenge to applying HTA in Bhutan. Potential means of applying HTA in this setting

were proposed, such as specifying the indication for the drug that is reimbursable, which can lead to substantial savings.

After the presentations, members of the mission had a meeting with EMTD. Dechen Choiphel, chief program officer and Pempa introduced Bhutan National Essential Medicines List (NLEM). There are 437 items in the list which cover 95% of health problems. The list is updated every two years to meet the growing demand for new drugs and technology, and the latest version is 2018. The number of drugs and vaccines on the list are categorized into vital (V), essential (E) and non-essential (N). The supply of drugs and vaccines are according to the level of health facilities (national referral hospital, regional referral hospital, district hospital, and basic health unit). High-level hospitals have the largest number (437 items) of essential drugs, while BHUs have the least number (108 items). The medicines and vaccines in the Bhutan National Essential Medicines List are procured at the central level by MoH.

Hospitals can propose new drugs to be listed to EMTD. EMTD prioritizes the proposed list based on clinical needs and costs incurred. EMTD reviews approximately 4—6 proposals annually. In addition to the challenge of rising demand for new drugs, EMTD faces challenges from drug prices. Pharmaceuticals are procured from India, and most are generic drugs. Procurement uses a seal-bid first-price auction, which stipulates the lowest bid wins. However, winning bids are much higher than market prices. This significant price gap needs further investigation. Furthermore, since Bhutan is a small market for the pharmaceutical industry, the country may not possess strong negotiation power against the industry.

UNICEF

UNICEF's work in Bhutan started in 1974. The goal of UNICEF is to improve the lives of children, youth and women in the country in key programmatic areas, including maternal and child health, education, water, Sanitation and Hygiene, child protection, adolescent development and participation, and communication for development. UNICEF procures

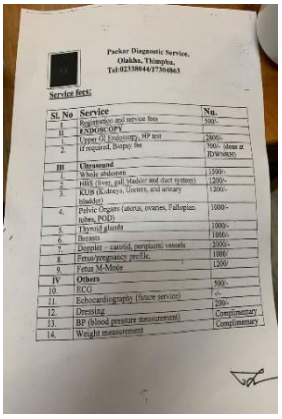
immunization supplies in the country and also assists the country in collecting and analyzing data for monitoring the situation of children and women.

UNICEF's representative suggested the following potential areas of interest or for collaboration on HTA:

- Multiple Indicator Cluster Surveys (MICS) conducted by UNICEF in 2010 and is planned to initiate a new round in 2020.
- Service delivery readiness survey which was jointly conducted by the World Health Organization (WHO) and World Bank.
- Public Finance for Nutrition survey, which appears to collect information on alcohol.
- Evaluation of a web-based tool for Maternal and Child Health, which is linked to DHIS 2.

PAEKAR Diagnostic Centre, Thimphu

There are in total 12 diagnostic centers in Bhutan, and only two in Thimphu. The establishment of a diagnostic center needs to be approved by MOH. There is a guideline issued by MoH for private practice, but it does not aim to regulate them. Nevertheless, the diagnostic centers are obliged to report some of the health indicators such as communicable diseases to the MoH. All hospitals are public except for a handful of private hospitals. The private facilities can provide diagnostic services but are not allowed to prescribe or perform any treatment to patients. The treatment, if necessary, is required to refer patients to public hospitals. Endoscopy is a common request of patients, and it was indicated that this was linked to the high incidence of gastric cancer in the country.


Paekar Diagnostic Service,
Olakha, Thimphu.
Tel:02339844/17304843

Service fees

Sl. No	Service	Nu.
I.	Registration and service fees	500/-
II.	PAP/HPV/HPV	
1.	Upper GI Endoscopy, HP test	2800/-
2.	If required, Biopsy fee	900/- (done at DWSRH)
III	Ultrasound	
1.	Whole abdomen	1500/-
2.	HBS (liver, gall bladder and duct system)	1200/-
3.	KUB (kidneys, ureters, and urinary bladder)	1200/-
4.	Pelvic Organs (uterus, ovaries, Fallopian tubes, POD)	1000/-
5.	Thyroid glands	1000/-
6.	Breasts	1000/-
7.	Doppler – carotid, peripheral vessels	3500/-
8.	Fetal pregnancy profile	1000/-
9.	Fetus M-Mode	1200/-
IV	Others	
10.	ECG	500/-
11.	Echocardiography (future service)	+/-
12.	Dressing	200/-
13.	BP (blood pressure measurement)	Complimentary
14.	Weight measurement	Complimentary

There are approximately 20-25 patients a day at the centre. Most are elderly, and more than half come from outside Thimphu. The advantage of seeking services at diagnostic centers is shorter the waiting times, but its expenses are out-of-pocket. However, the director of the PAEKAR Diagnostic Centre informed that the centre does not make a high profit on charges compared to private clinics in other countries, and sometimes the centre provides services free of charge for poor people. The

centre is entirely privately funded. Sources of funding to the centre are bank loan and charity (such as Loden Foundation).

Royal Center for Disease Control (RCDC)

The Royal Center for Disease Control (RCDC) is under the Department of Public Health, MoH. It was earlier a lab but in 2015, its mandate was expanded, and the centre moved to its current location, the building for which was donated by the Indian government. RCDC's mission is to provide reliable scientific information on health and diseases to ensure well-informed policies and promote planning of effective and sustainable public health interventions. Their mandates include public health, disease surveillance of important diseases, outbreak and response, reference laboratory services, food and water safety, quality of pharmaceutical drugs, narcotic and psychotropic substance testing, poison and its management, conducting basic and applied research, and developing guidelines and capacity of health professionals in laboratory science and epidemiology. A third of RCDC's budget comes from the Royal Government of Bhutan, with the remaining supported by international organisations including WHO, the Global Fund to Fight AIDS, Tuberculosis and Malaria and the US Center for Disease Control (CDC). It has collaborated with the Armed Forces Research Institute of Medical Science (AFRIMS) in Bangkok, Thailand, and Osaka University Graduate School of Medicine in Japan. They have also contributed to the Global Disease Burden (GBD) project.

Below are examples of laboratory service at RCDC:

Disease surveillance, outbreak, and response: the focus of surveillance and outbreak are mainly communicable diseases such as tuberculosis (TB), influenza, and measle and rubella. Outbreaks of diseases are reported promptly through an e-system. About 75% of village health workers have been trained to use a web-based reporting system or short message service. The RCDC reports real-time events and their dates, locations, reporting sources, and status on the website.

Food and water safety: RCDC is responsible for food safety and testing and water surveillance.

National Drug Testing Laboratory: verification of the quality of medicinal products are conducted based on the request and sampling by the Drug Regulatory Authority, MoH.

Research: Staff at RCDC have conducted research on thiamine level in infants.

Guidelines: RCDC has developed guidelines on biosafety as well as the National Early Warning, Alert and Response Surveillance (NEWARS).

RCDC produces event data reporting (data are available online), and these data are used in the Health Management Information System (HMIS). The data reported by RCDC and HMIS can be used for estimating the burden of the disease and measuring health outcomes for HTA. The classification of diseases/conditions in RCDC data and HMIS are, however, different. Then HMIS report is based on ICD10 codes and are generally broader (such as cold) than the RCDC data (such as influenza). The epidemiology unit conducts M&E using the data available.

Representatives from RCDC were invited to join the HTA panel if the topic is relevant. For example, the HTA project on PCV and Rotavirus vaccines.

Jigme Dorji Wangchuck National Referral Hospital (JDWNRH), Thimphu

JDWNRH is a national referral hospital that provides primary, secondary, and tertiary health services. The hospital provides the most advanced health services in Bhutan and functions as a teaching hospital in the country. JDWNRH is fully financed by the MoH, but it has been granted autonomy since 2014 in order to provide more and efficient services. JDWNRH has the flexibility of daily activities and management. However, JDWNRH must follow MoH policies as it is a public hospital. The hospital has an annual performance agreement (APA) with the MoH and has its budget earmarked every year. The spending in JDWNRH accounts for about 30% of the total national healthcare expenditure. The governing board has four representatives from the MoH: the Minister, the Secretary, and two Director-Generals.

The director of the hospital has a vision to advance the health services (and believes that they provide better services) and build the capacity of health professionals. JDWNRH recently introduced advanced technologies such as CT, MRI, and mammography diagnostic equipment and improved laboratory services (MRI was out of service). However, this poses some challenges. Patients are likely to skip the primary healthcare facilities and seek medical services directly from JDWNRH. Crowdedness and long waiting lists are common problems in this hospital. To address this issue and exercising its autonomy, JDWNRH operates the off-hour services (evening clinics) during 4 – 7 pm to reduce the crowd and charge a service fee. The hospital conducts some outreach activities in Thimphu and nearby communities. The hospitals also opened clinics for rheumatology and diabetes to address patients with specific needs, and since they had doctors with those capacities.

Human resource capacity building and staff mobility are significant challenges for the hospital. The current number of specialists are unable to meet the growing demand for advanced medical care. The hospital itself can neither recruit specialists nor send doctors to secondary and primary health facilities. Tie-ups with doctors are one means of meeting this demand.

If necessary, medicines that are not listed in the EML can be prescribed in JDWNRH, and it is free of charge under the “named patient medicines” scheme. The medicines under

this scheme are procured by the hospital through a pharmacist based in Kolkata, India. Moreover, patients can be referred to hospitals in other countries (mostly India) for treatment. The number of patients who use the overseas referral scheme is about 1,200 each year. The treatment costs are fully subsidized for referrals from any eligible patient who is approved by the referral committee. The cost of the scheme casts serious concern to the sustainable management of the current healthcare system.

Gyaltsuen Jetsun Pema Wangchuck Mother and Child Hospital, Thimphu

It is a tertiary public hospital, specializing in antenatal, pediatric, and neonatal care. The hospital is part of JDWNRH hospital and aims to cater to all maternal related health services. Gyaltsuen Jetsun Pema Wangchuck Mother and Child Hospital provides prevention and promotion services to the pregnant women and children below the age of five. Services include family planning, antenatal and postnatal care services, screening of cervical cancer, lactation management unit, newborn examination, and immunization. The hospital also conducts some outreach activities in the communities.

Bhutan Health Trust Fund (BHTF)

The Bhutan Health Trust Fund (BHTF) was established by a royal charter in 2000 to focus on primary health care and is an autonomous unit, previously under the MoH, governed by a Board of six members representing various government entities. Since 2015, it has been funding essential medicines and vaccines; BHTF covers 100% of the cost of medicines and 23% of the cost of vaccines, with the rest being covered by other donors.

BHTF has a capital base of about USD 37-40 million/ Nu. 2.18 billion and is currently invested in fixed deposits, short-term deposits, bonds, insurance schemes, and savings account. Its operating costs are covered by the return on investments. The Asian Development Bank (ADB) USD 10 million to the BHTF as part of a USD 20 million grant to support the country's health system (fund goes directly to the Ministry of Finance). As donors gradually withdraw, the fund needs to find other ways to sustain the support on medicines and vaccines. Currently, civil servants and employees of the formal sector contribute 1% of their salaries to the BHTF fund. The BHTF has proposed to increase this rate to 2% in the Health Bill. There are seven staff at the BHTF with officers recently recruited to manage investment.

Department of National Budget, Ministry of Finance (MoF)

The Ministry of Finance (MoF) manages the national health budget that is allocated to public health facilities by the government's Five Year Plan. The national health budget is approximately 3.6% of GDP. A sin tax is not implemented to finance healthcare cost. Currently, spending on infrastructure (new hospitals) accounts for the largest proportion

in the national health budget, as the government aims to increase the number of hospitals to expand tertiary healthcare in the eastern region.

The principle concerns regarding the health budget are the increase in health care spending and sustainability of free health care services. The challenges are:

- An increasing number of overseas referrals
- Donors withdraw from the country; the Constitution requires that all recurrent expenditure be covered by domestic revenue.
- Availability of expensive advanced health technologies
- Increase in the prevalence of non-communicable diseases (NCDs) and consequently increase the demand for new drugs and sophisticated health care services is on the rise.

Other challenges are the domestic human capacity to provide health services, requiring coordination between the Ministries of Health and Education and ensuring accessibility and building infrastructure in the mountainous terrain.

Given the increasing health expenditure, the MoF has to allocate more resources and budget to the health sector. However, in the long term, MoF encourages preventive measures and priority setting within the health sector rather than mobilize resources from other non-health sectors.

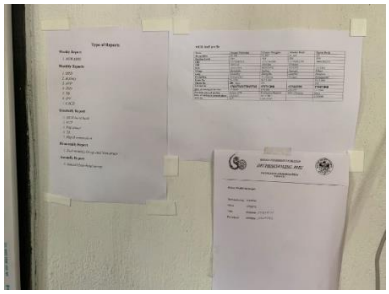
Under the current situation, MoF believes that HTA is one of the key tools that can help promote the sustainability of financing of health. Concerning the study on the social and economic cost of alcohol, there is currently no sin tax on alcohol. It is unclear whether there will be any impact given the home-brewed option of “ara.” Sale of tobacco is banned in the country. However, it is possible to bring cigarettes from other countries. Regarding the threshold project, the Department of National Budget agreed to share the annual health budget data for analysis.

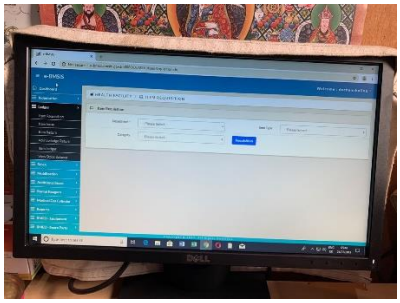
Dechen Choling Basic Health Unit Grade I

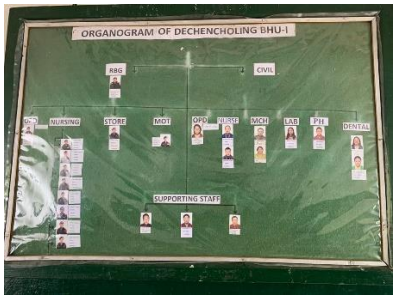
This health facility, located in the compound of the Royal Body Guards, was a Grade II BHU but recently has been upgraded to a Grade I BHU. The buildings and the structure of the facility are those of typical BHU II, although the services provided are of a Grade I facility. The total number of staff members is 30. Some of the medical professionals are from the Army. Usually, there is a doctor at a BHU Grade I, but the unit is awaiting a doctor to be transferred. The facility receives funding directly from the District Health Office (DHO).

The BHU provides primary health care, immunization, family health and planning. The clinical officer of BHU is obliged to report activities, Intellectual and Developmental Disabilities (IDD), Care for Child Development (C4CD), auditing to MoH on a monthly or quarterly basis. It also reports and manages pharmaceutical storage, demand, distribution through Electronic Bhutan Medical Supplies Inventory System (eBMSIS).

People within the community or from the nearby community have free access to this BHU. On average, 80 patients come to the BHU every day with about a population of 8,000-9,000 in its catchment area. There are four beds at this facility to keep patients under observation. The facility also has an ambulance service for making referrals. To track patients, an electronic patient information system (ePIS) will be used in all health facilities. A long wait list was observed in this BHU, probably because there are no district hospitals in the area. Despite small infrastructure and limited resources, it functions as a "semi-district hospital" to decongest JDWNRH. To expand the scope of services, setting up a district hospital in the area is under discussion.



National Traditional Medicine Hospital (NTMH)

The National Traditional Medicine Hospital (NTMH) is a district hospital and provides tertiary care for traditional medicine. Currently, 96 traditional medicines are in the national essential medicine list. There are in total 71 traditional healthcare facilities in the country, and the NTMH is the only hospital specializing in traditional medicine. It has 30 doctors, 27 health assistants, and 21 supporting staff. Its departments include outpatient, inpatient, therapy services, and a lab unit. It can refer patients to JDWNRH, and JDWNRH also refers patients with non-communicable diseases to this hospital, for which a guideline is in place. Clinicians from both hospitals meet weekly to discuss cases. The number of patients per day is 450-500 in the summer and about 250 in the winter. Across the country, traditional medicine units are integrated with the allopathic units.

There are four types of services provided: invasive (e.g., acupuncture), mild (e.g., steam), inpatient (e.g., cleansing) and outpatient (e.g., meditation). The raw materials are ground in a nearby factory to make tablets, pills, powders, ointments for distribution. Any supplies required by the hospital go through the standard tendering system. A course, which includes an internship component, is offered at the university with 8-10 lecturers.

The sustainability of raw materials is a matter of concern. Production of the traditional medicines relies on scriptures and mass-production, in response to increasing demand, may bring its challenges in terms of regulation. Some of the traditional medicines are included in the EML. It is hard to conduct a cost-effectiveness study since drug efficacy cannot be evaluated as chemical drugs.

WHO country office

The mission team met with Dr Rui Paulo de Jesus, WHO Representative (WR), who gave a brief overview of WHO's mission and activities in Bhutan. The WHO country office collaborates with the MoH and is dedicated to the development of health care. It operates on biennium workplan and started working with the MoH and the GNHC to identify priorities for the health sector, which include both communicable and non-communicable diseases. There are six focus areas under the Twelfth Five Year Plan, eight regional flagship programs, and 13 programs based on declarations by the Regional Committee or the World Health Assembly. Some of the initiatives discussed were as follows: WHO has conducted STEPS survey on the prevalence of non-communicable diseases in 2014 and 2017; setting up of outdoor gymnasiums; supplemental immunization activities for eliminating measles; establishing an emergency unit to facilitate management and communication during emergencies. In terms of addressing the issues of smoking and alcohol, demand-side measures, including advocacy activities, take time as tobacco is accessible despite a ban on sale and alcohol is cheap and widely available to the public.

Malaria is dominant in the southern part of the country. Multi-drug resistant (MDR) TB is a major cause of concern, and 30% of those affected are of productive age.

Regarding human resources in health, an area of interest for JICA, there is a need for specialists as well as management skills. An increase in health expenditure is also warranted. It was noted that there was good coverage of immunization for HPV.

Hitotsubashi University and HITAP shared details on the potential projects with the MoH on the cost-effectiveness threshold as well as the social and economic cost of alcohol. Other initiatives such as the economic evaluation of the pilot PEN package as well as the Prince Mahidol Award Conference (PMAC) commissioned work on best buys, wasted buys and controversies were discussed. The WR indicated an interest in having a capacity for health economics in the country.

Khesar Gyalpo University of Medical Sciences (KGUMS) of Bhutan

The university aims to build capacity for human resources and research activities. With the progress of HTA in the country, the university hopes to collaborate with the MoH to conduct cost-effectiveness research. Some participants also address the importance of HTA and discussed issues such as whether HTA agencies are involved in M&E of decisions made; how HTA agencies can link evidence to policy effectively; involvement of universities in the HTA and the importance of managing conflict of interest. It was noted that currently, there is no national guidance on listing and de-listing of health technologies in the country. Some drugs were deleted from the EML without scientific assessment. HTA is expected to be a decision-making tool to reduce drug cost.

The University is willing to collaborate internationally, primarily as part of the capacity building of its staff members. It is planning to set up a National Centre for Medical Education and Simulation to promote such activities. The University requested information from JICA about the possibility of support for such a centre. The EMTD also indicated that it receives 7—8 proposals such as HPV screening and cochlear implants, which could collaborate with the university.

Asian Development Bank (ADB)

The health sector is not a principal area of support for the ADB in Bhutan which focuses on the investment in infrastructure and economic reform, and provision of technical support for which it relies on WHO and UNICEF as it does not have a health specialist in situ. ADB has approved USD 20 million in grants for health sector development. The grant is split into three parts:

- Health care financing: USD 10 million to BHTF
- Electronic patient information system (ePIS): USD 4 million (usually costs USD 10—15 million)
- Infrastructure (Satellite clinics): USD 6 million

The BHTF was set up as a revolving fund to generate its revenue, using interest earned to purchase essential medicines. ADB had been previously approached to contribute to the seed funding for BHTF. The organization used to be run by civil servants but has now changed and it autonomous. It is also not involved in the procurement process. The approval of the grant aims to facilitate a mechanism to invest funds and generate revenue to ensure sustainability. The disbursements for this grant are made on complete agreed policy actions.

One of the issues identified is the limited bargaining power with pharmaceutical companies given that Bhutan needs to import its drugs. Regional pooled purchasing mechanisms, as has been done in West Africa were suggested. ADB has experience in facilitating regional initiatives as in the Greater Mekong Sub-region, although it has largely been focused on trade.

ADB is concerned about the sustainability of the free healthcare system in Bhutan and emphasizes the need for the government to increase health expenditure. It also pointed out that there is a need for clarity on the measurement of the national health expenditure. For example, it is currently estimated that 3.6% of GDP only is spent on health. It is not clear if this amount includes extra-budgetary spending by BHTF.

Courtesy Call to Health Minister

Members of the mission introduced the purposes of visit and briefly explained the importance of setting a cost-effectiveness threshold in Bhutan. Her Excellency Lyonpo Dechen Wangmo explained current health issues and challenges in Bhutan, underscoring the importance of evidence of in strategic planning for the health sector. Some of the areas requiring attention are: the overseas patient referral system; the management of medical devices, for example, the one MRI machine that had broken down without a suitable alternative for repair or replacement for a long time; and cervical cancer which is the most common cancer among women in Bhutan and for which a screening program is on-going. Conducting HTA is an urgent need for cost control of health expenditure, which should be consistent with the guiding principles for the country and helps improve the happiness of the Bhutanese population. She is committed to providing the necessary support for conducting this threshold research and encouraged knowledge exchange. The Minister also expressed her concern about the problem relating to excess alcohol consumption.

Gidakom Hospital

Gidakom hospital is a district hospital in Thimphu district, providing general and specialized services. It was set up in the 1960s as a mission hospital to take care of leprosy patients. There are 60 beds in the hospital, 40 for TB and leprosy patients, and 20 for the general ward, separated for men and women. It has a general clinic, traditional medicine unit, dental health unit, and community health unit. The hospital has the only prosthetic and orthotic workshop in the country. There are two general practitioners and a total of 100 staff at the facility. Like the other health facilities, the medical officer has to report morbidity, hospital activity, and mortality to the MoH.

The hospital is specialized in communicable diseases, especially MDR TB, for which patients from across the country are referred to this hospital, including from JDWNRH. Mental illness of TB patients is a matter of serious concern. A specialist is dispatched from JDWRH and visits once in two weeks. There is a rigorous follow-up process for patients, and their family members after patients are discharged. Hospital staff also participate in campaigns organised by the MoH. One of the first challenges faced was the structure of the TB section. The wards now have more ventilation. Staff normally do not receive specialized training to manage MDR TB cases; as with other MoH staff, there are no additional incentives for managing potentially high-risk centres. An infectious disease hospital is planned for construction on the hospital ground at a higher level, for which support from JICA has been requested.

Discussion on the potential research collaboration on social cost of alcohol consumption in Bhutan

The Policy Planning Division (PPD), Office of the Secretary, MoH plans to conduct a study on the social and economic cost of alcohol in Bhutan and requested HITAP to provide technical support. To discuss this further, the PPD team comprising Mr. Tashi Penjor, Chief Planning Officer and Planning Officers Mr. Sonam Phuntsho, Mr. Tshering Wangdi, and Mr. Kinley Zam met with the mission team. A representative from KGUMS, following discussions the previous day, also joined the meeting.

Overview of the study

Alcoholic liver disease is one of the major causes for mortality and is frequently cited a major societal concern; however, while widely accepted as an area requiring action, currently, there is no study available on the magnitude of the problem. The PPD has proposed this study and sees it as an urgent request as there is support from the current government. The timeline for the study is expected to be six months, with the aim of having results available in time for the next parliament session in December 2019.

Discussion on scope and conduct of the study

The PPD sees this as a reference study for future discussions on policies on alcohol consumption. The WHO method may be applied to estimate the costs of alcohol consumption. The team is not certain about the availability of data for the study. It may not be possible to capture costs of alcohol outside the market due to the high level of consumption of home-brewed, local alcohol, *ara*. The need for data on who consumes alcohol would be needed. The PPD planned to rely on secondary data sources for this study, but as the study proposal is developed and parameters identified, primary data may be collected.

There was a discussion on whether to focus on the health sector or economy-wide costs of alcohol. This also spurred discussion on what ought to be included in social costs. It was noted that there is an interest in understanding the distributional effects of alcohol consumption as well. However, this may be difficult to measure. It was suggested that not all alcohol may be treated in the same way as some types may be more damaging than

others. Taking economy-wide considerations may enlarge the scope of the study to a degree where it may not be useful. Similarly, the study may not be able to address regulatory and enforcement issues. The role of individual behavior in alcohol consumption was also noted. Following the discussion, the PPD proposed that the focus of the study be on economic costs occurring in the health sector; the potential for incorporating social costs may be considered.

The PPD would like to derive specific recommendations from the study. It was noted that it would be critical to involve different stakeholders during the process of the study to ensure its policy relevance. One potential policy option is a tax on alcohol, although, given the preponderance of home-brewed alcohol, this may not be effective and may lead to substitution to non-market options. There is currently a report alcohol taxation policy, however, it is draft form and cannot be shared externally.

In terms of the process of conducting the study, it was proposed to have a Scientific Advisory Board, which would critically review the study regularly; this may be revisited by the technical team. In Bhutan, the study will require administrative approval, which can be requested after the proposal is prepared. It will then need to be reviewed by the Ethical Board. The process of getting these approvals on an expedited basis will take one month; the team will need to plan accordingly.

Discussion on collaboration

This study would be carried out through the WHO Southeast Asia Regional Office (SEARO), which will contract HITAP directly. HITAP would need to provide a budget estimate as soon as possible and PPD would liaise with WHO SEARO.

The timeline of 6 months for the study was deemed as being short. It was advised, based on HITAP's previous experience of conducting such studies, that the study can be conducted over a year.

PPD aims to use this study as a means of building its team's capacity in conducting research. The team is responsible for shaping policy, whereas other arms of the MoH do the implementation. The PPD may consider conducting a capacity building workshop to increase the understanding of HTA per suggestion by EMTD. The PPD research team

will comprise the Mr. Sonam Phuntsho, Mr. Tshering Wangdi, and Mr. Kinley Zam, who will be expected to devote their time for this study. Mr. Kimley Zam works in the HMIS section and is familiar with the data. The focal person from the PPD team for this study would be Mr. Sonam Phuntsho.

Ms. Waranya Rattanavipapong will be leading the support from HITAP and will work together with Prof. Jurgen Rehm from the Centre for Addiction and Mental Health (CAMH), Toronto, Canada, an expert in the field, Ryota Nakamura and Ying Yao from Hitotsubashi University.

Brainstorming meeting with EMTD on Cost-effectiveness Threshold Study

The members of the mission and EMTD discussed the data availability of the threshold project. Available data to conduct the research include:

- A household survey conducted by the MoH
- Administrative data used to produce the Annual Health Bulletin
- Detailed mortality data from RCDC
- MICS from UNICEF
- Health budget (MoF)

The threshold research could use facility-wise data from HMIS, which include mortality of all causes from the last five years or more, facility attributes such as caseload and staff composition, demographics of each catchment area. Budget data will also be retrieved from the facility-wise data from HMIS, exploiting the fact that annual spending plan for a given health facility is based on the spending of the same facility in the previous fiscal year (plus 10% buffer). The budget data will be sorted by health facility at the primary healthcare level, to measure annual healthcare budget per capita for each catchment area as the key variable representing health expenditure. Health budget at secondary and tertiary healthcare level will be divided equally to each primary-care catchment area. The threshold research will estimate the marginal change in the healthcare budget on changes in the health outcomes.

At the meeting, it was not decided if the team explicitly include out-of-pocket expenditure into the analysis. Moreover, it was pointed out that the fact that some people seek

healthcare in health facilities outside their catchment area may bias the analysis. According to a staff member of MoH, it is estimated that the number of such case would be about 10% of the total cases.

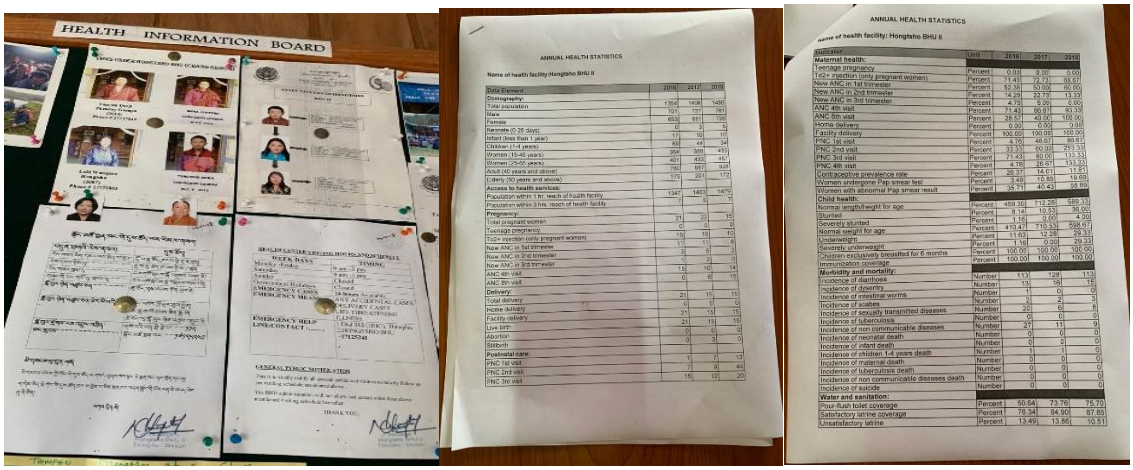
The participants agreed that the first draft of the research proposal would be shared with the team by the end of August. The proposal will be finalized by the end of the year. The team plans to visit Thimphu again for finalizing the research plan and also to start analyzing the data. In the next visit, the team may visit health facilities in the east part of the country. The funding source for this project will be explored.

Changiji Satellite Clinic in Thimphu

The satellite clinic is located near the central Thimphu and was set up in 2008. Even though the clinic only has two rooms in the whole facility, it essentially functions as BHU Grade II, but it does not have its catchment area, currently serving to decongest JDNRHW. The clinic accepts about 40 patients per day, and covers minor illness mainly, and provides the community primary healthcare. There are patients from Paro, who visit Thimphu for shopping and come by the clinic on their way home. There are three Health Assistants and one caretaker at this clinic.

Hongtsho Basic Health Unit Grade II

This is a typical BHU Grade 2 facility. The facility has 1,440 households in its catchment area. Like other BHU facilities, it produces monthly reports of its activities and sends it to the MoH. Diarrhea was among the leading causes but has slipped in the number of cases in recent years. The facility covers 339 households, and while it does not conduct any outreach activities, staff visit the two monasteries in the vicinity every three months. Currently, there are only two staff, one Health Assistant and one supporting staff. Posters on various initiatives were translated, with the initiative of the staff, into the *dzongkha*, the local language, in order to be more accessible to the visiting population. There are 3-5 beds, and referrals are made to JDWNRH. There is no ambulance on location, and a call is made on the "112" line. The facility has received support from JICA for a vaccine refrigerator (technician on call), and the building was supported by the Government of India.



Next steps

Cost-effectiveness threshold study

- Based on the discussion and observations in Thimphu, Hitotsubashi University (RN and YY) will draft a research proposal by the end of August and will share it with other contributors in the team.
- The team will plan to visit Bhutan again during Autumn or Winter 2019, to finalize the proposal and also to start analyzing the administrative data on the health budget and population health outcomes. The second trip may involve visits health facilities in the eastern part of the country.
- The team will explore research funding for this study.

The social and economic cost of alcohol

- HITAP to submit a budget proposal to PPD by 31 July 2019
- PPD to review the proposal and liaise with WHO; revert to HITAP by 2 August 2019

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