



**Feasibility Study University Hospital & School of Medicine
at the Vietnam National University Ho Chi Minh City
Executive Summary**

The Service Recipient Team (Vietnam National University) recruited the Service Provider Team (International Consultant Team) to carry out a feasibility study with the aim of planning and establishing a University Hospital and a School of Medicine in Ho Chi Minh City, Vietnam. The study lasted from April 2010 to October 2010. The data and information obtained was derived from public secondary sources such as the Vietnamese Ministry of Health, the World Health Organization (WHO), the World Bank (WB) and the Asian Development Bank (ADB). Additionally, the study was supplemented by primary data and views collected from top academic experts at Vietnam's most prestigious Medical Universities.

With a total population approaching 90 million, Vietnam is currently undergoing a fast economic transition. Major factors have contributed to this phenomenon. One of them is population growth, a feature which is dependent on global development in terms of economic progress, political environment, and academic challenges. After "Doi Moi", the country's reform and opening policy, Vietnam has transformed from a predominantly inward-driven, centrally-planned economy toward an economy based on market mechanisms and decentralized systems. This has helped the country sustain positive growth during the East Asian crisis in the Nineties, as well as during the latest global financial crises.

Southern Vietnam, in particular, has performed outstandingly well. Not only is the area a regional economic hub, but it has also progressed into a global player. As the country's economic center, the area around Ho Chi Minh City is renowned for its bubbly, energetic combination of both ancient heritage and economic advancement. The area, however, is still confronted by a number of challenges in relation to population growth. Currently, policy-makers have to deal with the needs of the rapidly increasing population number, as well as shield its inhabitants to the best of its ability.

The population density of Ho Chi Minh City can be compared to metropolitan areas such as Cairo (Egypt), Bangalore (India) and Baghdad (Iraq). Living areas, public infrastructure, and the provision of public goods for cities of comparable sizes remain major obstacles for local decision-makers. Public service providers are regularly confronted with the challenge of efficiently allocating public goods. The allocation and provision of such goods must be comprehensively planned, in order to effectively encourage regional economic development. This creates the foundation for an active and healthy population, which, in turn, can contribute all the more to the nation's economic progress.

During the course of the study, the urgent need for adequate healthcare in less-developed areas was revealed. Overcrowded public hospitals, in particular in the HCMC area, as well as double and triple occupancy rates of patient beds, lengthy patient queues stretching through the hallways and out the hospital, over-prescription of self-medication due to overwhelmed healthcare providers, and healthcare services that are simply lacking in quality are just a few of these concerns. It is clearly evident that the city requires both tertiary healthcare facilities, in order to meet the accelerating population growth in southern Vietnam, as well as competent medical experts.

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The following feasibility study consists of four parts: (A) the University Hospital, (B) the School of Medicine, (C) the Master Plan and (D) the Financial Evaluation.

Firstly, the introduction illustrates indicators such as demography, macro-economic and political development for the part A University Hospital, which forms the basis for further planning. Based on macro-and micro economic evaluation, the actual determination of demand of a University Hospital and a School of Medicine in the project area have been established. Subsequently, existing health care services are explored. The second part discusses the functional overview of the facilities with its corresponding clinical services. Further steps include the quantification of human resource requirements, and the section is concluded with an anticipated management and operation principles for the best possible functioning of a University Hospital. The following issues were revealed in Part A:

- The UH planning is divided into Phase 1 and Phase 2 and will reach a total of 466 beds;
- At full capacity, inpatient beds total 454, outpatient beds 12;

	Phase 1	Phase 2	Total
Total Acute Care (inpatient)	275	125	400
Total Critical Care (inpatient)	24	30	54
Total Outpatient	12	0	12
TOTAL	311	155	466

- Diagnostic and Therapeutic Services contain results as reflected in the left column (Phase 1) and the right column (Phase 2):

DIAGNOSTIC & THERAPEUTIC SERVICES	
Laboratory incl Blood Bank & Pathology	Laboratory incl Blood Bank & Pathology
Labour and Delivery (7+1 Cesarean)	Labour and Delivery (7+1 Cesarean)
Physiotherapy/Occupational Therapy	Physiotherapy/Occupational Therapy
Operating Theaters (8)	Operating Theaters (12)
Imaging (CT, MRI, Flouro, Mammo, X-Ray,US)	Imaging (Phase 1+CT, Flouro, Angio)
Cath Lab (1)	Cath Lab (2)
Nuclear Medicine	Nuclear Medicine
	Radiotherapy

- Total staffs running at full capacity in year eight sum up to 843, out of which 150 are Employed as Doctors, 424 as Nurses & Allied Health, 205 as Non-Clinical Support and 64 as Administrative Staff.

	Phase 1	Phase 2	Total
Employed Doctors	110	40	150
Nurses & Allied Health	252	172	424
Non Clinical Support	118	87	205
Admin Staff	58	6	64
TOTAL	538	305	843

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Secondly, in Part B (School of Medicine) focus of the discussion is placed on the academic environment in Vietnam, while concentrating on medical education. This part explores the existing, discipline-based training and clinical practice in the country, and form the foundation for the proposed structural organization of the planned School of Medicine. Additionally, it analyzes the feasibility of introducing a tailor-made curriculum for higher medical education in Vietnam, which comprises modules of integrated Austrian medical curriculum. The section consequently closes with an essential part formulating specific and potential research program development to be applied to the situation in Vietnam. Part B demonstrates the following results:

- The principles of education for the MF are: student-centred, practice-oriented, and evidence and research-based education.
- In 2010, student intake comprised 100. At full capacity, the number will soar to 250 students per year, equalling a total of 1,500 students at most.
- The total staff number at Medical University for Phase 1 is planned at 101 with 43 academic staff. At full capacity, the total is 118 with 49 academic staff.

	Phase 1	At Full Capacity
Professors	27	27
Student Todors	16	22
Academic Staff	43	49
Senior Management	2	2
Middle Managment	3	3
Senior Clerical	10	12
Clerical Staff	43	52
Administration Staff	58	69
TOTAL	101	118

Thirdly, part C depicts the Master Plan, which displays the architectural design and the layout of the rooms. The sight plan explains the building adjustment by taking traditional background, climate, and actual local needs into consideration. The implementation schedule is based on accurate planning estimates obtained from previous project experiences in the region. Based on the clinical departments, in line with clinical and academic requirements, medical equipment planning assures the optimal performance of a University Hospital and a School of Medicine. The third part C includes following outcome:

Master Plan

- Total square meters encompass the following figures for the University Hospital and School of Medicine:

	Phase 1	Phase 2	Total
UH	44,086	10,671	54,757
MF	15,878	4,050	19,928
Total	59,964	14,721	74,685

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In conclusion, part D reveals the Financial Evaluation, and takes the methodology of local macro-economic indicators into account. Investment costs by area type are defined, including a dynamic investment cost over a 10-year period. Operation costs estimates have been divided into two major groups: direct cost and other cost. Ultimately, the revenues on assumptions accomplish this financial section, to arrive to subsequent conclusion:

Financial Evaluation

- Total investment costs amount to a grand total of EUR 97,791,068, out of which approximately three quarters account for Phase 1 and the remaining quarter for Phase 2.

in EUR	Phase 1	Phase 2	Total
UH	28,411,000	5,548,000	33,959,000
MF	7,973,000	1,827,068	9,800,068
TOTAL Construction	36,384,000	7,375,068	43,759,068
UH	34,356,000	15,758,000	50,114,000
MF	2,418,000	1,500,000	3,918,000
TOTAL Equipment	36,774,000	17,258,000	54,032,000
TOTAL UH	62,767,000	21,306,000	84,073,000
TOTAL MF	10,391,000	3,327,068	13,718,068
GRAND TOTAL	73,158,000	24,633,068	97,791,068

It has been further noted, that there will be **demand-side benefits** caused by:

- Epidemiological change that “western disease patterns” become “eastern” due to life style factors, which will require advanced health care services and biomedicine for the future.
- Accelerating population growth requires additional health care services.
- High population density in major urban areas, in particular the south, creates requirements for additional health care services in HCMC.
- A rise in the number of affluent citizens, who will require enhanced medical services.

The following factors affect the **supply-side benefits**, which include:

- Provide state-of-the-art biomedical equipment, which allows early detection of diseases.
- Improve the country’s severe shortage of medical doctors.
- Offer clinical knowledge through advanced academic exchange programmes.
- Supply health care facilities outside the city centre, which will lead to a reduction in traffic congestion.