Islamic Republic of Afghanistan
Ministry of Public Health
General Directorate of Policy & Planning
Directorate of Private Sector Coordination
Public-Private Partnership Unit

SUMMARY OF HOSPITALS' FEASIBILITY STUDIES

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This document was produced with support from the U.S. Agency for International Development- funded Health Policy Project under Cooperative Agreement No. AID-OAA-A-10-00067. The information provided in this document is not official U.S. Government information and does not necessarily represent the views or positions of the U.S. Agency for International Development

TABLE OF CONTENTS

ABBREVIATIONS ii

DISCLAIMER.....iii

OVERVIEW 1

INVESTING IN AFGHANISTAN.....2

JINNAH HOSPITAL 3

JAMHURIAT HOSPITAL..... 11

SHEIKH ZAYED HOSPITAL..... 18

ABBREVIATIONS

EBITDA	earnings before interest, taxes, depreciation and amortization
GIROA	Government of the Islamic Republic of Afghanistan
HPP	Health Policy Project
IRR	internal rate of return
MOPH	Ministry of Public Health
MRI	magnetic resonance imaging
NGO	nongovernmental organization
NPAT	net profit after tax
NPV	net present value
PPP	public-private partnership
USAID	United States Agency for International Development

DISCLAIMER

The information in this document was extracted from feasibility study reports prepared for Ministry of Public Health (MOPH), Government of the Islamic Republic of Afghanistan (GIRoA) with technical and financial support from the USAID-funded Health Policy Project, based on assumptions as identified throughout the text and upon information, data and conclusions supplied by others as detailed in the report. The MOPH is not in a position to, and does not, verify the accuracy of, or adopt as its own, the information and data supplied by others.

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OVERVIEW

The Government of the Islamic Republic of Afghanistan (GIRoA) and the Afghanistan Ministry of Public Health (MOPH) are offering three publicly-owned hospital facilities for operation under public-private partnership (PPP) models. Each of these hospital facilities has been donated to the GIROA by foreign governments to benefit the people of Afghanistan through increasing the quantity and quality of accessible tertiary care.

Interested investors have the opportunity to capture an estimated US$285 million in tertiary health care currently sought outside Afghanistan[1]. Those seeking care internationally are interested in a higher level of quality than currently offered in country and/or services which are unavailable in Afghan hospitals. Private operators are sought to bring innovative methods of service delivery and needed capital to the Afghanistan health system.

Under the MoPH, a Public Private Partnerships (PPP) Unit supports efforts to design, promote, negotiate and manage health sector PPPs aimed at encouraging interested local and international companies to invest in Afghanistan's health (hospitals) sector. Afghanistan's legal and regulatory framework has been modified and expanded to accommodate PPP contracts, creating a protected and favorable environment for investors.

The Afghanistan PPP Manual, detailing each stage of the PPP process, guides the PPP Unit's work. Investors can access this Manual through the MOPH PPP Unit. The Manual provides transparency to the PPP process from inception to contract to post-contract monitoring. As a key component to the PPP process, feasibility studies have been completed through third parties, evaluating the commercial viability of a proposed PPP project within the MOPH's vision for each facility. More specifically, the following points are addressed:

- Projected revenue associated with the provision of a defined scope of care and specialty mix.
- Hospital's operational and financial context including initial capital expenditure, life cycle costs and regionally competitive fee rates for a private sector provider.
- Site and building condition, including cost estimates for any necessary facility remediation.
- Specialist health planner assessment of the ability to deliver the required services in the facilities.
- Demand analysis based on the disease burden and consumer attitudes towards private healthcare provision, substantiating the revenue assumptions within the financial model on bed occupancy and facility utilization.

These studies were completed with technical and financial support from the USAID-funded Health Policy Project Afghanistan. This report provides profiles of the three hospitals currently on offer for operation under the PPP model: Jamhuriat Hospital, Jinnah Hospital and Sheikh Zayed Hospital. The information presented in these profiles is from the full feasibility studies.

Interested investors should note that the outlined bed structures, capital allocation, and lease payments included herein are merely the proposed structures put forth in the feasibility studies for each of the three hospitals. The MOPH will consider alternative proposals and alternative structures submitted by any interested investor(s) during the bid process, should an alternative structure be deemed necessary by the interested investor(s).

[1] Government of the Islamic Republic of Afghanistan. Ministry of Public Health. 2013. *Afghanistan National Health Accounts 2011-2012.*

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MINISTRY OF PUBLIC HEALTH

INVESTING IN AFGHANISTAN:

BUSINESS AND SECURITY ENVIRONMENT

BUSINESS ENVIRONMENT

After decades of conflict, Afghanistan is transforming itself, building a modern economy that supports robust businesses and opens its doors to both domestic and international investors. As the country rebuilds, business in Afghanistan continues to grow at an astounding rate. The resource rich country now has all the hallmarks of an economy that is on the verge of urbanization and industrialization – a growing economy and business class, a stable monetary and political system, a young and growing population of over 34 million, and an increasing demand for goods and services, particularly in the healthcare sector.

Afghanistan's economic progress has been significant: from 2003 to 2012, the country experienced GDP growth of nearly 400%, increasing from $5.3 billion USD to over $20 billion USD. Future GDP growth is expected at over 4% per annum after 2014. Furthermore, the international community has maintained its strong long-term commitment to Afghanistan's economic development, with $16 billion USD pledged from international donors from 2015 to 2018.

Afghanistan's infrastructure has seen dramatic improvements over the past decade. With over $4 billion USD invested in Afghanistan's "ring road" connecting the country's major cities, travel time between populated regions has fallen significantly. New international airport terminals have been completed in Kabul, Herat, and Mazar, linking Afghanistan to the rest of Asia and the Middle East. Afghanistan's internet infrastructure is perhaps the best in the region, due to $2.5 billion invested in fiber ring. Furthermore, electrical capacity in the country has increased more than eightfold since 2002.

Most importantly, the Afghan government has been proactive in establishing a regulatory environment that is highly attractive to international investors. FDI regulations allow for 100% ownership by foreign firms. There are no restrictions on equity sales or the repatriation of profits by foreign investors, and there is open exchange of currency. Recently, Ministry of Public Health have been successful in pushing for the inclusion of the healthcare sector in Afghanistan's upcoming investment promotion policy. This legislation will include a seven-year income tax holiday for investors, low utility rates, free purchase of government land for healthcare facilities, and breaks on import tariffs for all machinery and equipment.

SECURITY ENVIRONMENT

In the last few years, Afghanistan's military and police forces have taken significant strides towards providing a secure and stable environment for Afghan business. Since 2012, Afghan security forces have maintained the security operations of all government, civilian and commercial operations in Afghanistan, with very promising results to date. US-led ISAF forces have focused their efforts on building the capacity of Afghan forces, with a continued emphasis on additional security capacity building through 2014 and beyond.

In terms of security, Kabul – home to over 6 million Afghans – is uniquely situated as the focal point of the country's rebuilding efforts. With major government ministries, NGOs, embassies and corporations headquartered in Kabul, the collective security environment far surpasses that of the southern and eastern provinces, where the remaining elements of the insurgency continue to clash with government forces. The Ministry of Public is confident that international investors, upon their arrival to Afghanistan, will be pleased with the operating environment of these three hospitals, each located in downtown Kabul.

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MINISTRY OF PUBLIC HEALTH

JINNAH HOSPITAL:

FEASIBILITY STUDY FINDINGS SUMMARY

GENERAL INFORMATION

Jinnah Hospital was designed as a 200-bed general hospital donated by the Islamic Republic of Pakistan. Its construction is approximately 60-65% completed and is scheduled to be ready for handover to the MOPH in mid-2014. On completion, Jinnah General Hospital is intended to operate as a PPP hospital.

The facility is located on Kabul's west side, in an area of little congestion on well-maintained Shaheed Mazari Road. A high school is located to the east of the hospital building, while the property to the west is currently a construction site. Residential buildings make up the south of the plot. No public institutions or large shopping areas are in the proximity, limiting traffic as well as security measures on routes leading to the hospital.

The scope of services will include: gynecology, pediatric health, medical and surgical services, an intensive care unit, emergency care, social services, diagnostic services and auxiliary services such as a blood bank, ambulance and mortuary. The feasibility study considered the commercial viability of the private sector operating Jinnah hospital and concluded that the hospital can deliver a reasonable profit margin.

SERVICE STRUCTURE

A revised service structure has been designed, optimizing the hospital operating as a private commercial facility. This resulted in the conversion of the thalassemia center into a day surgery center, better tailored Kabul's epidemiological needs. The table gives details on the service allocations.

The pricing levels for patients has been apportioned according to their financial status, resulting in three categories: gold, silver and bronze.

Table 1. Types of Services

	Original		Revised
Gynaecology	25	Gynaecology	25
Paediatrics	25	Paediatrics	25
Medical	50	Medical	50
Surgical	50	Surgical	50
Thalassemia	50	Day Surgery Suite - Day surgery theatre (1) - Endoscopy rooms (2) - Dialysis rooms (2)	0
ICU	8	ICU	8

Table 2. Bed Allocation

Bed type	Description	Pricing coverage
Gold	Single room with en-suite	20% hospital total beds
Silver	Two (2)-bed bays	16% hospital total beds
Bronze	Four (4)-bed bays	64% hospital total beds

MARKET ANALYSIS

Market demand was assessed using international and regional benchmarks of hospital beds per 1,000 population. Currently, Kabul has 0.7 beds per 1,000 people, with the immediate area surrounding Jinnah hospital even more underserved with ~0 beds per 1,000. To reach the regional benchmark (Iran: 1.7 beds per 1,000), an additional 3,400 beds are required in the local community. Additionally, there is an urgent demand for high quality services, which are currently sought abroad at significantly higher prices than those found in Kabul.

A review of the existing private hospitals has been performed and interviews with relevant officials and organizations have been conducted. All interviewees stated that service quality improvement hinges on the availability of highly qualified staff.

The projected overall bed utilization has been set at 90% and 70% utilization rate for the surgical beds as they are constrained by operating theater capacity. The proposed additional day surgery capacity will take pressure off the operating theatres and the Accident & Emergency (A&E). The tables below give a detailed in- and outpatient profile.

Table 3. Inpatient & Outpatient Profile[2]

Inpatients			Outpatients		
	Initial Appointments	Follow-up Appointments		Initial Appointments	Follow-up Appointments
Medical	5,291	23,725	Speciality Outpatients	102,663	13,753
Surgical	9,463	21,718	Accident & Emergency	40,081	-
Intensive Care Unit	-	2,920	Day Surgery	2,517	-
Total	14,754	48,363	Total	145,261	13,753

SITE AND BUILDING REVIEW

A site and hospital building review was conducted, providing a clear view of the building's suitability and quality. The findings include:

- Operation theaters finish and equipment (AC/Laminar Air, sterile environment, gas supply, etc.)
- Necessary expansion of washing facilities across several rooms and floors
- No plan or available space in building for magnetic resonance imaging (MRI) services
- Other key issues: radiation protection, fire safety, no mortuary, waste disposal

Although a building design and construction standards analysis was planned, the study team was unable to access full building plans, technical documentation and access to the site/building. Therefore the survey is considered incomplete. The potential bidders are therefore recommended to do further due diligence. Should future expansion of the facility be warranted, the modular design offers ample opportunity for expansion and development of the hospital building.

[2] Initial appointments are those which patients are accepted for the first time in the hospital and when patients are discharge from hospital but need some typical visits for monitoring that is follow up appointments.

ACCREDITATION

Options for international accreditation were included. Accreditation aims at achieving the best standards with the available resources, placing emphasis on overall performance and patient safety. Hence the quality of the management team and the quality control is pivotal. The goal of accreditation can be reached within 3-5 years, but it is important to consider the high cost and the effect on service demand due to affordability.

FINANCIAL MODEL ASSUMPTIONS

The financial model incorporated the following key assumptions:

- Full financial sustainability is maintained
- No burden on public funds for operational costs
- Achieving international standards of operations
- Full professional staffing to accommodate capacity projections and utilization
- Adequate level of equipment and maintenance
- Full cost recovery from patients
-

Key elements in considering the revenues and expenses are:

- Costs of remediation and extension works required prior to commissioning
- Initial cost of equipping the hospital
- On-going building lifecycle maintenance and cyclical equipment replacement

The table below illustrates several key expenses over the 25-year lease period.

Table 5. Key expenses over the 25-year lease period

Expense Category	Cost	
	AFN	USD
Cost of Equipment Replacement	848 m	16.3 m
Lifecycle Cost[3]	391 m	7.5 m
Cost of MRI Suite Extension	59 m	1.1 m

Note: The cost of initial hospital equipment, i.e. USD 12.8 million, hasn't been considered in the table above but may need to be added as an initial capital cost since the hospital equipment may not be donated as assumed under the feasibility study for Jinnah Hospital.

Further capital expenses may be necessary to remediate building flaws not identified in the feasibility study due to the incomplete building survey.

Two core scenarios were presented and analyzed to ascertain project viability:

- **Base Case:** a reference "Shadow" model of a Kabul-based hospital – Internationally accredited, high cost; fully staffed by expatriate and top local staff, paying lease charges from Year 1 to Year 25.

[3] This is cyclical replacement of major items (e.g. windows, plant roofing etc).

- **Commercial Case:** a hired foreign management company takes over 6 months prior to commissioning the hospital and leaves after 5 years. No lease charge is paid for the first 5 years, compensating for the high initial costs. Payroll costs are gradually reduced from Year 6 with local staff taking over from expatriates.

Each scenario considered two variants of lifecycle and equipment replacement cost allocation:

1. The OPERATOR pays the lifecycle and equipment replacement costs: in this case the funds will come directly from the hospital revenues (cash flow), and will reduce the net earnings for distribution to MOPH (as lease payments).

2. The MOPH pays lifecycle and equipment replacement costs: funds are taken from the gross sum of lease payments received by MOPH; the ministry will set aside funds, reducing its net income, but will retain control of spending, including its timing.

BASE CASE

Table 6. Financial Data of Base Case per Annum

Metric	Value (AFN)	Value (USD)
Cost per bed	4,188,422	80,547
Income per bed	4,970,205	95,581
Cost per bed day	11,475	221
Income per bed day	13,617	262
Total Income	696 m	13.4 m
Total operation cost	555 m	10.7 m
Payroll to non-payroll operation costs	445 m / 110 m	8.5 m/ 2.1 m
Annual Lease Charge	64 m	1.2 m
Annual life cycle expenditure by MOPH	49.56 m	0.95 m
Operator's income per annum	77 m	1.5 m
Operator's return on income	11%	11%

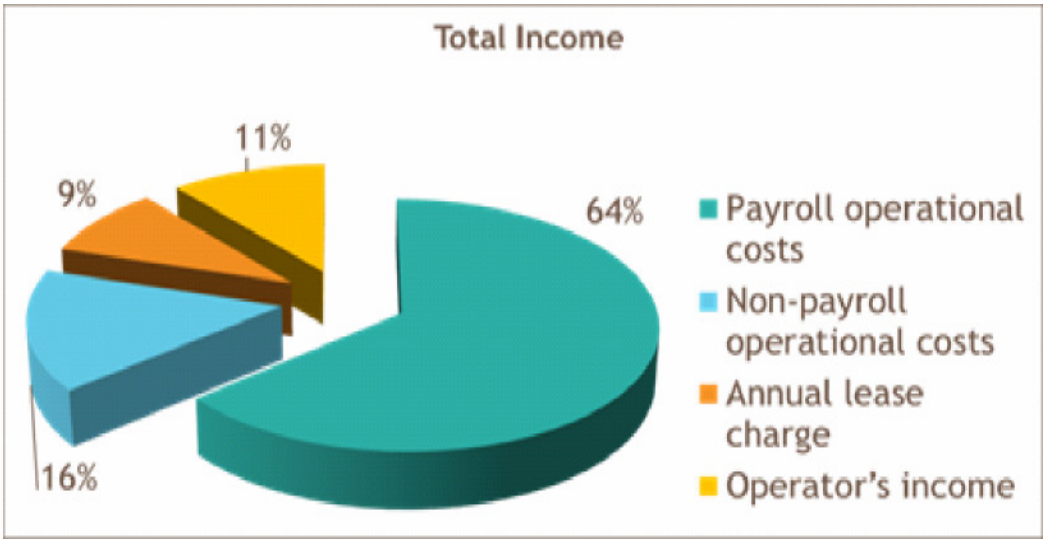
The baseline scenario assumes the hospital is run as a private sector operation under a 25-year concession, with an operator's profit at moderate, but commercially acceptable levels (9-11% on income).

The following table illustrates the key data for the hospital cash flow considering both versions of lifecycle cost allocation.

Table 7. Lifecycle Costs in Base case

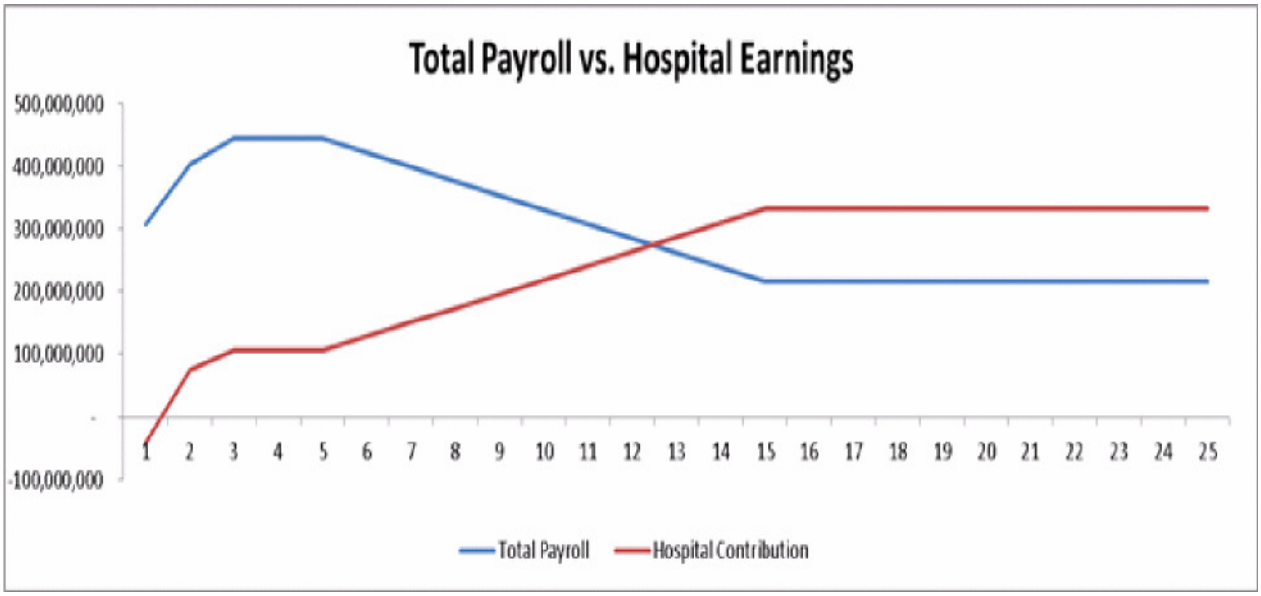
Life Cycle Cost by:	MoPH	Operator	MoPH	Operator
	AFN million	AFN million	USD million	USD million
Total Income	16,972.01	16,972.01	326.38	326.38
Hospital Running Costs	(13,663.33)	(13,663.33)	(262.76)	(262.76)
Hospital Contribution	**3,308.68**	**3,308.68**	**63.63**	**63.63**
Equipment Replacement, MRI and Lifecycle Costs		(1,298.10)		(24.96)
Surplus to Distribute	**3,308.68**	**4,606.78**	**63.62**	**38.67**
Guaranteed Fixed Rental				
Lease to MoPH	1,494.37	288.93	28.74	5.56
Operator Return	1,814.31	1,721.65	34.89	33.11

Personnel costs constitute 64% of expenses, representing the key-defining factor for the financial results of this case. The majority of the revenues will be diverted to this cost item, as illustrated in the chart below.



COMMERCIAL CASE

The staff will gradually be replaced by local staff between years 5 and 15, as they gain qualifications costly expatriate and experience, significantly reducing the personnel costs. The operator will not pay on the lease for the first five years, compensating for higher initial costs.



The Commercial Case scenario generates significantly greater earnings for the hospital and better return to the MOPH. However, it is entirely dependent on the ability to replace overseas staff with local staff of comparable quality starting in Year 6. The following table illustrates the key data for the hospital cash flow, considering both versions of lifecycle cost allocation.

Table 8. Lifecycle Costs in Commercial Case

Life Cycle Cost by:	MoPH	Operator	MoPH	Operator
	AFN million	AFN million	USD million	USD million
Total Income	16,091.72	16,091.72	309.46	309.46
Hospital Running Costs	(10,121.36)	(10,121.36)	(194.64)	(194.64)
Hospital Contribution	**5,970.36**	**5,970.36**	**114.81**	**114.81**
Equipment Replacement, MRI and Lifecycle Costs		(1,298.10)		(24.96)
Surplus to Distribute	**5,970.36**	**4,672.26**	**114.81**	**89.85**
Guaranteed Fixed Rental				
Lease to MoPH	4,173.42	3,134.94	80.26	60.29
Operator Return	1,796.94	1,537.32	34.55	29.56

The commercial scenario will need a significant investment in training local staff to ensure the sustainability of quality after the hand-over. Increasing the operator's profit share may be necessary to cover the associated cost and to make the option more viable and attractive.

LEASE RENTALS

The above cash flow predictions for lease rentals are based on the GUARANTEED FIXED rental, where the Operator pays the same amount each year to MOPH. The payment is not dependent on the actual hospital performance.

In the REVENUE SHARING rental option, the Operator pays a set percentage of the hospital's net earnings to MOPH, thus taking into consideration the actual hospital performance.

The MOPH should expect the performance-related lease rental to be slightly higher than the fixed amount, as the risk is shared and shifts from the Operator to the Ministry.

Expected lease rental amounts for both scenarios and rental options are displayed in the table below. Gross (nominal payable by the Operator) and net lease income (after deduction of funds for equipment replacement and lifecycle costs from nominal gross rentals, in the case MOPH bears these costs) are shown:

Table 9. Lease Rental Amount

Lifecycle costs by:	MoPH	Operator	MoPH	Operator
	AFN million	AFN million	$US million	$US million
Guaranteed Fixed Rental				
Base gross	**1,494**	**289**	**28.7**	**5.6**
Base net	196	289	3.8	5.6
Commercial gross	**4,173**	**3,135**	**80.3**	**60.3**
Commercial net	2,875	3,135	55.3	60.3
Profit Sharing Rental				
Base gross	**1,826**	**609**	**35.1**	**11.7**
Base net	528	609	10.2	11.7
Commercial gross	**4,437**	**3,398**	**85.3**	**65.3**
Commercial net	3,138	3,398	60.4	65.3

OPERATOR'S PROFITABILITY

The table below illustrates the expected return for the operator in each of the analyzed options:

Table 10. Expected Return for Operators (Millions)

Income/Profit	Base Case MOPH Life Cycle		Base Case Operator Life Cycle		Commercial MOPH Life Cycle		Commercial Operator Life Cycle	
	AFN	USD	AFN	USD	AFN	USD	AFN	USD
Operator's Income	1,814	35	1,722	33	1,797	35	1,537	30
Operator's profit margin	10.69%	10.69%	10.15%	10.15%	11.17%	11.17%	9.55%	9.55%

Tariff Reduction Analysis

A tariff reduction scenario is provided, essentially lowering the prices for the public, bringing easier access to services for the poor.

In the base case, we have looked at possible levels to improve the affordability:

- **10% reduction** in overall tariff (or alternatively, providing free treatments to 17% of patients) would require the MOPH to give up the lease income of AFN 64 million to purchase hospital services. Effectively The MOPH would subsidies treatments from the lease rental income.

- **50% reduction** in hospital prices would not only require the MOPH to give up any income of lease rental, but also would involve a reduction in total payroll (staffing level and/or quality) by 64%.

The cost of achieving a 10% tariff reduction in the commercial case – approximately AFN 1,600-1,700 million (equal to US$ 30.8 - 32.7 million) over 25 years – could be covered from the net lease revenues chargeable after Year 5.

Jinnah Hospital: Summary of Key Findings

Under the service assumptions detailed by the MOPH, Jinnah Hospital can be financially viable and pay reasonable returns to the private operator as well as lease rent to MOPH.

The Base Case scenario would deliver the Operator a moderate profit margin – especially in the case of the Operator being a NGO or non-profit organization. However, profitability will be maximized when tariffs charged are slightly higher than prevailing in Kabul's current commercial hospitals, those more in-line with services acquired in neighboring countries such as Pakistan and India.

The Commercial Case based on the gradual reduction of the payroll cost looks particularly attractive for both parties. It achieves strong earnings from Year 10 (31% raising to potentially 55% from Year 15), allowing for significant income to MOPH (even allowing for the costs of remedial works and lifecycle maintenance) and subsidized treatment prices. It is however entirely dependent on local availability of qualified and experienced staff.

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MINISTRY OF PUBLIC HEALTH

JAMHURIAT HOSPITAL:

FEASIBILITY STUDY FINDINGS SUMMARY

Jamhuriat Hospital

GENERAL INFORMATION

The 200-bed Jamhuriat Hospital was donated to the Afghan people and the MoPH in 2009 by the People's Republic of China. The hospital is located in Kabul City Center, in close proximity to numerous prominent private and public institutions such as the Golbahar Center (Kabul's largest shopping center), the Ministry of Education and the Head Office of Kabul Police. Although at times quite congested, the location of Jamhuriat Hospital affords a very central locale with access to a significant population base.

The MOPH seeks to use the Jamhuriat Hospital in establishing a regionally competitive specialist tertiary care teaching hospital, delivering a wide scope of healthcare services not currently available in Afghanistan. The scope of services will include general medical and general surgical care, including outpatient care, special therapies, pharmaceutical and radiology services. As a teaching facility, the MOPH intends to help build Afghanistan's domestic capacity in health care human resources.

The feasibility study considered the commercial viability of the private sector operating Jamhuriat hospital and concluded that the hospital can deliver a reasonable profit margin.

SERVICE STRUCTURE

The table below shows the types of services that will be delivered in this hospital.

Table 1. Types of Services

Medicine	# Bed	Surgery	# Bed
Cardiology	13	Cardiothoracic Surgery	16
Respiratory	7	Vascular Surgery	8
Neurology	9	Orthopedics	17
Nephrology	8	Neurosurgery	7
Gastro-intestinal Medicine	12	Urology	7
Endocrinology	3	Dental / Oral and Maxillofacial Surgery	8
Oncology – chemotherapy	12	ENT	8
Oncology – radiotherapy	12	Plastic and Reconstructive Surgery	8
Rehabilitation / Geriatrics:Orthopaedics (Combined with Stroke)	12	Intensive Care Unit	7
Coronary Care Unit	10	Gastro-intestinal Surgery & Other Surgery	16
Total	**98**	**Total**	**102**

MARKET ANALYSIS

As part of the feasibility study, we reviewed the existing services available both in Afghanistan and the region. Our research conducted through a household survey suggests patients are

willing to consider healthcare within Afghanistan provided the quality is assured. The key finding is that there are no comparably high-quality services currently offered in Afghanistan, and 17% of all respondents had traveled abroad for tertiary care services (rising to 40% in some middle income brackets). Taken alongside the epidemiological analysis, this supports the case that demand is sufficient for an additional 200-bed tertiary care hospital in Kabul.

A 600-household survey captured attitudes toward Afghanistan's private health sector. Findings included a high utilization – over 98% - of private medical care across all income levels surveyed. Of those households surveyed, 17% had sought medical treatment abroad. A previous study commissioned by the MOPH, considered why Afghans acquired medical treatment in India. The results pinpointed key factors such as regular misdiagnosis and a lack of quality facilities currently available in Afghanistan.

Available epidemiological data were analyzed to establish whether sufficient burden of disease exists to support additional beds providing the proposed scope of services. Afghanistan suffers from very poor health indicators, common across the services envisaged for the New Jamhuriat Hospital. The disease incidence data clearly show demand for services will be more than sufficient to support New Jamhuriat Hospital's additional 200 beds.

SITE ASSESSMENT

The site was fully assessed to grant an opinion on the facility's suitability to serve in its intended capacity as a tertiary care referral and teaching hospital. An expert was commissioned to fully document the extent of remediation work required as well as its suitability from a medical planning perspective. As per the MOPH requirements, the following assets are included in the site assessment: New Jamhuriat Hospital, Transformer/Switch Room and Stock Room.

Significant remediation work is required to bring the building to international standards. The site and building survey estimated the total work at 806 million AFN (US$ 16.8m. In addition, the medical planning assessments showed the hospital would need to be structurally remediated to deliver the intended services. The cost of this work is estimated at 192 million AFN (US$ 4m) and also suggests the building's capacity be limited to 200 beds, meeting international norms regarding beds per square meter. Structural deficiencies are derived from both poor planning and low quality construction. Corridors have a 1-meter width, whereas the minimum width required for international accreditation is 1.4 meters. Sub-standard materials were used for some key inputs, including doors, and the roof has visible cracks. There are no "as built" documents available, so some of the hospital's failings, such as the absence of basic fire safety requirements, could be due to either a lack of adequate planning or poor execution.

Key remediation activities need to be undertaken and are identified within the detailed assessment. The "specification of the preliminary design" agreed with the Chinese government is contained in the full site and building report.

There will likely be a number of alternative approaches to each remediation and the precise approach taken by any prospective bidder to deliver the tertiary healthcare services will depend on their service delivery model. In the financial analysis we compare the cost scenarios of remediation versus new build, allowing the MOPH to make an informed investment decision for making the site operational.

These findings do not fundamentally affect the feasibility of a PPP partner to operate the New Jamhuriat Hospital, but rather provide inputs into the financial model determining the financial feasibility.

ACCREDITATION

Options for international accreditation were included. Accreditation aims at achieving the best standards with the available resources, placing emphasis on overall performance and patient safety. Hence the quality of the management team and the quality control is pivotal. The goal of accreditation can be reached within 3-5 years, but it is important to consider the high cost and the effect on service demand due to affordability.

FINANCIAL MODEL ASSUMPTIONS

The financial model incorporated the following key assumptions:

- Full financial sustainability is maintained
- No burden on public funds for operational costs
- Achieving international standards of operations
- Full professional staffing to accommodate capacity projections and utilization
- Adequate level of equipment and maintenance
- Full cost recovery from patients

BASE CASE AND MAJOR SCENARIOS

Building on the base case model, scenarios are presented with sensitivities to test the findings. The detailed analysis is contained in the financial assessment. The two most relevant sensitivities modeled were based on the following:

- The MOPH pays the upfront capital. Several PPP contracting means are presented and various methods to provide the required subsidy. One alternative presented gives the subsidy as an upfront single payment by the MOPH, covering the initial cost of remediating the building, building the new facilities and providing the equipment. Other scenarios could provide an annual sum for the concession's duration.

- Establish fees 20% above the regionally competitive rates reflecting those rates typically charged by internationally sourced health care providers. This scenario presents the MOPH an overview of a private sector profit maximizing position rather than a continued focus on affordable treatment.

The MOPH must consider additional elements in each of these scenarios. For example, in paying the upfront capital costs, the MOPH needs to evaluate measures, ensuring that the private operator fully accepts its responsibilities in relation to the on-going lifecycle and equipment replacement costs over the 25-year concession period. Ultimately, the impact of removing the private operator's responsibility for the initial capital investment must be appropriately managed.

The table below summarizes the base case and two main sensitivities, resulting in three scenarios. All scenarios are based on remediation of the existing building with the private sector responsible for the on-going lifecycle and equipment replacement costs.

Base Case

In the base case, the private operator pays for all up-front capital costs and the fees are set at benchmark levels. An annual subsidy of 263m AFN (US$5.45m) is required from the MOPH for each year of the concession. The private operator fully pays for the capital investment and on-going lifecycle and equipment replacement cost. This is the subsidy required to deliver a commercially viable hospital, taking into account running costs, capital investment and ongoing life-cycle costs. The constraint faced, which is reviewed in Scenario 2 and 3, is the benchmark fee charged by the private sector provider.

Table 3. Financial Summary of the Base Case

Income / Cost	AFN	$US
Clinical Income	35,670,146,149	743,128,045
MoPH Subsidy	6,573,215,993	136,942,000
Total Income	42,243,362,142	880,070,045
Hospital Operating Costs	(29,462,103,542)	(613,793,824)
Amortized Initial Buildings Cost	(1,310,160,000)	(27,295,000)
Amortized Initial Equipment Cost	(807,720,000)	(16,827,500)
Buildings Lifecycle	(327,540,000)	(6,823,750)
Equipment Replacement	(2,884,714,286)	(60,098,214)
EBIT	7,451,124,314	155,231,757
Profit before tax	4,001,409,567	83,362,699
Net Profit	3,201,127,654	66,690,159

Scenario 1

In Scenario 1, the MOPH provides the up-front capital costs and prices are maintained at a regionally competitive level. The private operator will not incur associated borrowing costs of the upfront capital investments. Other aspects of their financial position would also be impacted favorably. The one-off cost to the Government would be for the 2,118 million AFN (US$ 44.1m) initial capital cost, with no requirement for any further ongoing annual subsidy.

Hospital operations will generate a small lease payment, resulting in revenue of approximately 35m AFN (US$0.73m).

Scenario 2 and 3

Under Scenarios 2 and 3, the fees are increased by 20%, reflecting the international market for health services. In Scenario 2, the private sector contributes the upfront capital costs and the private sector operator receives an annual subsidy of 6m AFN (US$125k). In Scenario 3, the MOPH provides the upfront capital costs and an annual lease payment of 293m AFN (US$6.1m) is generated

Table 4. MOPH Annual Subsidy Requirement-Scenarios

Sensitivity Analysis				
	Patient Income Per the Base Case		Patient Income + 20%	
	AFN	USD	AFN	USD
Private Operator Pays Up-Front Capital	Base Case		Scenario 1	
	263 m	5.48m	6 m AFN	0.125m
MoPH Pays Up Front Capital	Scenario 2		Scenario 3	
	-35m	-0.73m	-293m AFN	-6.10m

Commercial Case

In the Commercial Case it is assumed that the hospital will initially be staffed by a large proportion of expatriate professionals and minimal experienced local staff. From year 6 it is assumed that these expatriate staff will start to be replaced by local professional staff and by the end of year 15 the hospital will be fully staffed by local staff. MOPH subsidy is reduced or maybe removed completely.

Table 5. Financial Summary of the Commercial Case

Income / Cost	AFN	$US
Clinical Income	33,886,638,864	705,971,643
MoPH Subsidy	1,440,000,000	30,000,000
Total Income	35,326,638,864	735,971,643
Hospital Operating Costs	(21,801,956,621)	(454,207,430)
Amortised Initial Buildings Cost	(1,310,160,000)	(27,295,000)
Amortised Initial Equipment Cost	(807,720,000)	(16,827,500)
Buildings Lifecycle	(327,540,000)	(6,823,750)
Equipment Replacement	(2,884,714,286)	(60,098,214)
EBIT	8,194,547,957	170,719,749
Profit before tax	4,744,833,188	98,850,691
Net Profit	**3,795,866,550**	**79,080,553**

CAPITAL COSTS

Capital expenditure (CapEx) figures have been obtained from EC Harris (Built Asset Consultancy) for the new build and associated equipment cost estimates. ICCL Engineering Consultancy carried out the estimated remediation cost analysis for the existing building. A specialist Healthcare Planner provided an estimate of the cost impact required to deliver the necessary functional space requirements to operate Jamhuriat Hospital as a 200-bed private tertiary facility. Two options are presented in the table below. The first option is remediation and investment in Jamhuriat hospital, and the second options is the reference case for a new build.

Table 6. Capital Cost Estimate of Building and Equipment

CaPex Costs	Description	Floor Area	Option 1 Existing		Option 2 New Build	
		M2	AFN	USD	AFN	USD
Build Cost 17,985 m2					1,577,280,000	32,860,000
Remediate Existing	Physical Condition	17,985	807,120,000	16,815,000		
	Functional Layout		192,000,000	4,000,000		
Additional Facilities - Buildings	MRI / PET / CT / Radiotherapy	2,265	311,040,000	6,480,000	311,040,000	6,480,000
Total Building		**20,250**	**1,310,160,000**	**27,295,000**	**1,888,320,000**	**39,340,000**
Equipment	Main Footprint (new build)				456,120,000	9,690,000
	Remediate Existing		348,840,000	7,267,500		
	Additional Facilities		458,880,000	9,560,000	458,880,000	9,560,000
Total Equipment			807,720,000	16,827,500	924,000,000	19,250,000
Total Capex Build & Equipping			**2,117,880,000**	**44,122,500**	**2,812,320,000**	**58,590,000**

Jamhuriat Hospital: Summary of Key Findings

The New Jamhuriat Hospital building and equipment are in disrepair and are currently unsuitable for the delivery of tertiary care services without significant remediation expenses. Technical experts were engaged to estimate the notional cost of building a new equivalent hospital rather than remediating the existing building. The cost of the new build hospital, including equipping it, compares to the remediation costs of the existing building as follows:

Table 6. Remediation and New Build Cost

Capital Costs	Re-mediate Existing		New Build	
	AFN	USD	AFN	USD
Buildings	1,310m	27.3m	1,888m	39.3m
Equipment	808m	16.8m	924m	19.3m
TOTAL	**2,118m**	**44.1m**	**2,812m**	**58.6m**

The building remediation costs are calculated based on:

- 807m AFN (US$27.3m) cost of remediating the building; and
- 1 92m AFN (US$4m) cost of changing the configuration of the existing building; and
- 311m AFN (US$6.5m) cost of building new facilities required to house MRI/PET/CT and Radiotherapy.

This results in a total remediation cost for the existing building of 1,310m AFN (US$27.3m).

The total floor area of the existing facility plus the new facilities is approximately 20,250 m^2 for a 200-bed hospital providing an average of 101 ^{m2} per bed, within acceptable international norms. However, the hospital is relatively small for the range of tertiary care specialties provided, leading to some inefficiency in the cost. This is particularly true of medical staff costs where specialty bed numbers are very low.

Overall, the hospital would command significant market share in Kabul. Further tertiary care units might be developed by the French Medical Institution for Children (FMIC), although the scope of services offered will likely differ from those the MOPH has specified for the New Jamhuriat Hospital. Market competition is expected to grow, but the mix of services, as well as the high demand for quality care, will sustain several new tertiary care hospitals in Kabul.

وزارت صحت عامه

MINISTRY OF PUBLIC HEALTH

SHEIKH ZAYED HOSPITAL:

FEASIBILITY STUDY FINDINGS SUMMARY

GENERAL INFORMATION

Sheikh Zayed Hospital is a 100-bed Gynecological and Obstetrical facility, built with the financial support from Sheikh Zayed Foundation of United Arab Emirates. The hospital is located in District # 15 of Kabul City, just west of the Kabul International Airport. The hospital is a two-storied construction on 8.9 acres of land with a floor plate covering 9% of available land, thus leaving significant available ground for future expansion.

SERVICE STRUCTURE

The hospital's initial operational plans detail a secondary care maternal and neonatal facility with selected tertiary care services. Operational plans include an expanded bed capacity and development as a "*Center of Excellence*" for the care of women and children in Afghanistan. Gradually, the case mix will become more equitably distributed between secondary and tertiary care. The focused secondary and tertiary care services are contained in Table 15.

Table 1. Types of Services

SECONDARY	TERTIARY
• Gynecology and Obstetrics • Neonatology • Internal Medicine • General Surgery • Gastroenterology • Basic Orthopedics • Basic Gastroenterology	• Medical and Surgical Oncology • In Utero Insemination

MARKET ANALYSIS

Afghanistan's bed density of 0.68 beds per 1000 population (as per the HMIS and CSO estimates of total bed availability in the country) ranks the country among the world's lowest. To reach a level of 2.5 beds per 1000 population, Afghanistan requires an additional 46,528 beds. Considering the standard norm of 800 Sq Ft built up area per hospital bed, Afghanistan would be required to develop 37,222,600 Sq Ft of healthcare facilities to achieve a bed density of 2.5 beds per 1000 population.

Sheikh Zayed hospital is intended to serve women from 15 years of age to the end of life; a cumulative population of approximately 7.5 million in 2012. The table below forecasts the total number of women in Afghanistan at 24 million by the year 2042[4].

[4] Based on HPP calculation.

Table 2. Population Forecast

Particulars / Year >>>>	2012	2022	2032	2042
Estimated Total Population	25,500,100	31,854,812	39,793,141	49,709,728
Estimated female population	12,454,800	15,558,579	19,435,830	24,279,305
Female (15-49)	5,635,522	7,039,913	8,794,284	10,985,850
Female (49+)	1,513,533	1,890,711	2,361,882	2,950,471

The *Patients Acquiring Medical Treatment from India* study estimates that 7,265 patients fly annually from Kabul International Airport to India for advanced health care services. The study did not, however, break out the types of services sought in India, nor did it reflect the number of patients seeking care in other places such as Pakistan, Dubai or other regional locales.

Estimates from Health Management Information Systems (HMIS) indicate that 4.2 percent of Afghanistan's population is pregnant at any given point in time. Assuming that sufficient beds are available for all pregnant women with an occupancy rate of 80 percent to account uneven spread of demand over time,and a mean duration of stay of 3 days, a health system would require 10 maternity beds per 1,000 pregnant women.

The immense need for maternal, neonatal and pediatric hospital beds and services in Afghanistan is demonstrated in the table below.

Table 3. Beds Calculations

Item	Demand	Supply	Gap	Percent of Gap
Total Hospital and ICU beds	63,750	17,222	46,528	72.99%
Obstetric Beds	10,710	1,327	11,908	89.97%
Gynecology beds	2,525			
Gyne/Obs ICU beds	1,323	0	1,323	100.00%
NICU	3,748	113	3,635	96.98%

SITE AND BUILDING REVIEW

The hospital was completed in 2010 and has been vacant since. High quality materials were used in construction and the building remains in good condition. Small repairs were identified, but overall, the facility can be made operational with little additional work. Building construction costs were approximately US$12.5 million, with land costs estimated at US$5.5 million.

The hospital's design was altered during construction to increase bed capacity from 102 to 133, adding 31 beds catering to the needs of an expanded scope of services. ICU beds have been increased from 3 each for adult and neonates to 10 for adults and 12 for neonates. The labor rooms have been increased from two to four, housing eight labor tables, and operating theatres were increased from three to four. The diagnostic rooms for Mammography, Bone Mineral Densitometry, Endoscopy and Colposcopy have been designed with accreditation mind.

ACCREDITATION

Options for international accreditation were included. Accreditation aims at achieving the best standards with the available resources, placing emphasis on overall performance and patient safety. Hence the quality of the management team and the quality control is pivotal. The goal of accreditation can be reached within 3-5 years, but it is important to consider the high cost and the effect on service demand due to affordability.

FINANCIAL MODEL ASSUMPTIONS

The financial model incorporated the following key assumptions:

- Full financial sustainability is maintained
- No burden on public funds for operational costs
- Achieving international standards of operations
- Full professional staffing to accommodate capacity projections and utilization
- Adequate level of equipment and maintenance
- Full cost recovery from patients

SUMMARY OF FINANCIAL CALCULATIONS

The table below demonstrates the financial summary based on the detailed financial model developed for this hospital. Over the 25 year financial plan, the hospital operates at an average earnings before interest, taxes, depreciation and amortization (EBITDA) margin of 21%, with negative EBITDA in years 0-3 and a operational break even during year 3 of operations. EBITDA margins increase significantly after year 10, with an average of 27% in the last 15 years.

Table 4. Financial Summary

Particulars	USD (millions)
Total Revenue	627.42
Total Expenses	472.22
Total profit before depreciation, interest and taxes (PBDIT)	155.20
Total profit before tax (PBT)	142.07
Total net profit after tax (NPAT)	101.11
Project internal rate of return (IRR)	27.31%
Net present value (NPV) - Private Partner	17.78

The average net profit margin and project costs of the hospital over 25 years, with five year increments, are shown in the following two tables.

Note: Table 4 shows the financial data for project and there no subsidy or lease amount from or to government.

Table 5. Profit Margin

PROJECTED PROFITABILITY STATEMENTS						
	USD (millions)					
Year	Year 1	Year 5	Year 10	Year 15	Year 20	Year 25
Capacity Utilization General	35%	(85%)	85%	85%	85%	85%
INCOME						
a>	4.54	16.4	20.99	26.79	34.19	43.63
EXPENSES						
b>	5.75	12.57	15.70	19.80	25.59	32.38
Profit before interest dividend tax	(0.16)	3.87	5.28	6.99	8.60	11.25
Profit before tax	(0.68)	3.36	4.77	6.62	8.22	10.38
N P A T	(0.79)	2.36	3.40	4.76	5.89	7.43

Table 6. Total Project Cost

Particulars / Amount	Investor	Total	% of Cost
	USD (millions)		
Land (36309 Sq mt @ 11.84 $ / Sq Ft)	MOPH/SZF	5.30	17.78%
Construction including Engineering	MOPH/SZF	12.50	48.02%
Building Renovation and Remodeling cost	Private Partner	0.50	1.92%
Existing Equipment	**MOPH/SZF**	**2.67**	**10.27%**
Medical Equipment	MOPH/SZF	2.59	9.96%
Non Medical Equipment	MOPH/SZF	0.08	0.31%
New Equipment	**Private Partner**	**1.99**	**7.63%**
Medical Equipment	Private Partner	0.95	3.65%
Non Medical Equipment	Private Partner	1.04	3.98%
Automobile	Private Partner	0.45	1.72%
Furniture and Fittings	Private Partner	0.49	1.88%
Pre commissioning Expenses	Private Partner	0.18	0.70%
Deposits & Fees	MOPH/SZF	0.18	0.70%
Lease Fee	Private Partner	0.00	0.00%
MOPH Contingency (2% of cost)	MOPH/SZF	0.31	1.18%
PP Contingency (5% of cost)	Private Partner	0.18	0.69%
Working Capital (4 month Opex)	Private Partner	1.44	7.51%
Total Project Cost		**26.19**	**100%**

Table 7. Means of Finance

Sources	Total	Percent
MOPH/SZF	20.96	80.05%
Private Partner	5.23	19.95%
Total	26.19	100.00%

SCENARIOS

Each of the four different scenarios presented have been analyzed against the Internal Rate of Return (IRR) and Net Present Value (NPV) of the private partner's investment.

Scenario 1

Table 8. Scenario 1 Summary

Scenario I			Sensitivity			
Welfare Patients	0	%	**Option 1**	**Option 2**	**Option 3**	**Option 4**
Lease Rental	0	$/Sq.ft				
Subsidy Government	0	$	Base Case	Revenue less by 5%	Revenue less by 5% & expense increased by 5%	Revenue increases by 10%
		IRR	27%	21%	17%	37%
		NPV	18	10	5	31
		Total NPAT	101	77	58	150
		Pay Back Period (yr)	4	5	6	3

- In the base operating case, the hospital is an independent venture without obligations to the MOPH. Healthy performance in the present market conditions is shown, where in the hospital generates an IRR of 27%, NPV of US$18 million and NPAT of US$101 million over 25 years. The payback period for the initial capital in the project is 4 years.

- The project can afford 5% income reduction and still generate an IRR of 21%, NPV of US$10 million and at total net profit of US$77 million.

- The project can absorb 5% decrease in income and also simultaneous increase of 5% in expenditure, generating an IRR of 17% and 5 million USD worth of NPV.

- In the event the project revenue increases by 10%, it will generate an IRR of 37% as well as 31 million USD worth of NPV and a total net profit of 150 million USD.

Scenario 2

Table 9. Scenario 2 Summary

Scenario 2			Sensitivity			
Welfare Patients	5	%	**Option 1**	**Option 2**	**Option 3**	**Option 4**
Lease Rental	0	$/Sq.ft				
Subsidy Government	0	Mil $	**Base Case**	**Revenue less by 5%**	**Revenue less by 5% & expense increased by 5%**	**Revenue increases by 10%**
		IRR	22%	16%	8%	31%
		NPV	11	4	(3)	24
		Total NPAT	77	53	7	123

- This scenario is the base case for the hospital with an obligation to MOPH to treat 5% of patients free of cost and the hospital generates an IRR of 22%, and NPV of US$11 million for the private partner. The project generates a NPAT of US$77 million over 25 years.
- The project can absorb 5% decrease in income and still generate 16% IRR with a NPV of US$4 million. However, the project becomes unviable if there is 5% decrease in income, coupled with and 5% increase in expenses.
- In the event the project revenue increases by 10%, it will generate an IRR of 31%, US$24 million as NPV and a total net profit of US$123 million.

Scenario 2A

Table 4 Scenario 2A Summary

Scenario 2A			Sensitivity			
Welfare Patients	5	%	**Option 1**	**Option 2**	**Option 3**	**Option 4**
Lease Rental	0	$/Sq.ft				
Subsidy Government	3.7	Mil $	**Base Case**	**Revenue less by 5%**	**Revenue less by 5% & expense increased by 5%**	**Revenue increases by 10%**
		IRR	24%	18%	12%	36%
		NPV	12	6	0.15	26
		Total NPAT	80	56	36	128

- In this scenario, the private partner will treat 5% of patients free of cost. However, for the first 6 years, MOPH will reimburse the cost of treatment of the 5% welfare patients. Seventh year onwards, the private partner shall take up its responsibility. The value of services being rendered will be approximately US$28 million.

- In option 1, the hospital generates IRR of 24% and NPV of US$12 million for the private partner. The project generates a net profit of US$80million over 25 years.

- In option 2, the project can absorb 5% decrease in income and generate 18% IRR with a NPV of US$6 million and net profit of US$56 million. However, the project comes close to becoming unviable when revenue is decreased by 5% and expenses increased by 5%.

Scenario 3

Table 11. Scenario 3 Summary

Scenario 3			Sensitivity			
Welfare Patients	0	%	**Option 1**	**Option 2**	**Option 3**	**Option 4**
Lease Rental	15	$/Sq.ft				
Subsidy Government	0	$	Base Case	Revenue less by 5%	Revenue less by 5% & expense increased by 5%	Revenue increases by 10%
		IRR	19%	13%	Not Achievable	28%
		NPV	8	1	(8)	22
		Total NPAT	70	43	(64)	121

- In this scenario, the private partner will pay a lease rental to MOPH at US$15/sq.ft/yr to be increased by 2.5% every year; this will yield approximately US$36 million for MOPH at the end of 25 years. The private partner's NPV will be US$8 Million and IRR of 19%.

- In option 2, with reduction of revenue by 5% it is observed that the NPV continues to be positive with 13% IRR. However in Option 3, with revenue and expense decreasing and increasing by 5% respectively, the project becomes unviable.

Scenario 3A

Table 12. Scenario 3A Summary

Scenario 3A			Sensitivity			
Welfare Patients	0	%	**Option 1**	**Option 2**	**Option 3**	**Option 4**
Lease Rental	15	$/Sq.ft				
Government Subsidy	0	Mil $	**Base Case**	**Revenue less by 5%**	**Revenue less by 5% & expense increased by 5%**	**Revenue increases by 10%**
Lease Increase/ annum	2.5	%				
		IRR	24%	18%	12%	36%
		NPV	13	6	0.12	27
		Total NPAT	82	57	37	131

- The private partner will pay a lease rental to MOPH at US$15/sq.ft/yr to be increased by 2.5% every year, however, the same will start from the seventh year, and this model will yield US$29 million for MOPH at the end of 25 years.

- In the base case - option 1, the private partner's NPV will be US$13 million, IRR of 24% and Net Profit of US$82 million. The hospital can absorb a revenue fall up to 5% and still earn IRR of 18%, a NPV of US$6 million and net Profit of US$57 million. The project comes close to becoming unviable even if the expense is increased by 5% along with the revenue dip by 5%.

Scenario 4

Table 13. Scenario 4 Summary

Scenario 4			Sensitivity			
Welfare Patients	5	%	**Option 1**	**Option 2**	**Option 3**	**Option 4**
Lease Rental	5	$/Sq.ft				
Direct Government Subsidy	3.7	Mil $	**Base Case**	**Revenue less by 5%**	**Revenue less by 5% & expense increased by 5%**	**Revenue increases by 10%**
Lease Increase	2.5	%				
		IRR	23%	17%	9%	36%
		NPV	11	4	(1.96)	25
		Total NPAT	73	49	22	122

- In this scenario, the private partner will treat 5% of patients free of cost. However, for the first 6 years, MOPH will reimburse the cost of welfare patients. From the seventh year onwards, the private partner shall take up its responsibility to treat welfare patients. The value of services being rendered will be approximately US$28m in 25 years. In addition to this, the private partner will pay a lease rental to MOPH at US$5/sq.ft/yr to be increased by 2.5% every year starting from the seventh year of the contract. This will yield approximately US$10 Million for the MOPH at the end of 25 years

- In the base case of this scenario, the private partner's NPV will be US$11 Million, IRR of 23% and net profit of US$73 million.

- The hospital can absorb a revenue fall up to 5% and still earn IRR of 17%, a NPV of US$4 million and net profit of US$49 million. However, the project becomes unviable in the third option.

Sheikh Zayed Hospital: Summary of Key Findings

The feasibility study reflected an alteration the hospital's original plan, increasing bed capacity to 133 (+31) beds in expectation of an expanded scope of services. Further adjustments have been developed and suggested in the feasibility study, enhancing the final quality of the procurement, but all proposed adjustments are within the existing space, requiring no expansion in infrastructure.

Years 1-5 will concentrate on secondary care for maternal and neonatal needs, with selected tertiary care services. Expansion of services and beds are to commence in Year 6, developing the facility into a true centre of excellence for Women and Children's care in Afghanistan, including an expansion of tertiary care.

The hospital project has the potential to become a successful business venture, generating substantial profits to an operator with experience running hospital facilities. Just as importantly, this hospital has significant potential to serve the social cause of MOPH, enabling access to quality healthcare in an expanded population of women and children. For both of these potentials to be reached, the MOPH should extend support to the private partner in terms of a moratorium on lease rental or subsidies on treatment of welfare patients.