



Health Financial Flows, Revenue, and Cost Optimization

Efficiency Strategies to Support Financial Sustainability of the Health System in Jordan

I. Executive Summary

This background paper provides a pragmatic overview of cost drivers and revenue drivers of the public healthcare system in Jordan. The overview includes identification of key strategic interventions that would lead to an optimised cost structure and revenue enhancement within the Jordanian healthcare sector. This document also includes a rough estimate of the relative implementation effort and impact of these interventions to highlight the size of the opportunity in terms of savings and revenue enhancement. We applied a three-phased methodology that starts with a current situational analysis of selected financial components connected to the health care system followed by a discussion of possible strategic interventions and relative financial impact. To evaluate the financial flows into the public healthcare system, we identified 5 revenue drivers and 11 cost drivers. We believe that these 16 combined drivers, if improved, would promote an optimised cost structure and enhanced revenue resulting in a more resilient and sustainable public healthcare sector.

The analysis of these drivers and identification of specific interventions defines a reform strategy that will benefit all health system users with direct impact on alleviating hardships facing the most poor and vulnerable, including Syrian refugees. The reform strategy will optimize the health finance system and support improved quality and long-term sustainability. The approach here calls for domestic resource mobilization to alleviate financing gaps and debt along with improvements in the performance of the system for better use of public resources. The recommendation to mobilize additional resources must occur within the reality of macro fiscal Jordanian context, ensuring that policy commitment is commensurate with resource envelope.

The analysis of the current financial flows, revenue, arrears and the identification of some areas of inefficiency in the health sector show that the financial outlook of the health system is threatened by several internal and external factors including:

1. Increasing demand of health services due to demographic changes and population growth;
2. Scaling costs to provide recurrent treatment for chronic conditions due to lack of preventive services and growing prevalence of non-communicable diseases (NCDs)
3. Poor performance of the health system due to outdated managerial practices, fragmentation, duplication of functions and well-known inefficiencies; and
4. A cumulative debt of the public health system estimated as more than JD 400 million that represents a third of the entire public health 2018 budget.

In consideration of these factors and following an analysis of cost and revenue drivers, it is clear that the GOJ must adopt a comprehensive strategy to promote a financially sustainable health system. This strategy should include a high-level understanding of the need for accurate and timely information to inform decision makers. To achieve this, the GOJ must:

1. Establish accurate and responsive systems to collect timely data on health care utilization, health care spending, and revenue sources
2. Build capacity of staff and systems at the national and subnational levels to support, finance and governance, strategic planning, and decision making

Coupled with the recognition of decision support gaps and investing in improvement in the above areas, we propose the following as interventions that can provide the largest return on investment in support of a strengthened public and private health system:

1. Increase efficiency and coverage of public and private insurance programs. This includes shifting systems to inclusion of risk pooling and setting premiums and payment for services based on actuarial studies and best practice models. Initiatives to expand inclusion of a broader segment of the population will promote sustainable universal health coverage (synergizes/compliments Cost Drivers 5 and 10 and Revenue Drivers 2, 3, and 5)
2. Incorporate a master planning system that maps health needs (services, facilities, personnel) to inform all decisions related to allocating resources and investing in health care expansion (directly relates to item 1 above and synergizes/compliments Cost Drivers 3, 4, 7, 10, and 11 and Revenue Driver 1). The mapping of health needs will also help identify inefficiencies and setting baseline performance indicators.
3. Invest in shifting utilization toward primary health care and in public health initiatives and education to promote PHC clinic use, improve health, and reduce the incidence of noncommunicable diseases (synergizes/compliments Cost Drivers 1, 2, 7, 8, 9, and 10 and Revenue Driver 2)

II. Background

Available data for Jordan health costs describes an expensive system with significant room for improvement. The most recent National Health Accounts (NHA) report, completed for 2015, indicates total health expenditures of 2.249 billion JD; equivalent to 236 JD spending per capita. Total pharmaceutical expenditures for the same year were 581.9 million JD that is about 26% of the total health expenditures, which represents 61 JD per capita spending on medicines. Moreover, the last NHA detailed report indicates that about 77.2% of the MOH budget is for curative care (hospital), and only 16.7% for the primary health care. According to the same NHA data, the total cost for Syrian Refugees reached 307 million JD and is growing along with the increase in population size overall. In total, health care expenditures reached more than 8.4% of the Jordanian GDP in 2015.

Jordan is committed to achieving universal health coverage (UHC) as stated in its' National Health Strategy 2016-2020 as follows: "to provide health, financial and social protection to the entire population on fair basis". Over the years, the GOJ commitment to ensuring health for all has resulted in gains in the health status of Jordan's people. The life expectancy at birth has increased to 74 years for females in 2016, compared with 69.5 in 1995 and to 72.5 years for males in 2016, compared to 66 years in 1995. The under-five mortality rate in Jordan has dropped to 18 per 1,000 live births in 2016, compared with 37 per 1,000 live births in 1995. The total fertility rate declined from 7.4 in 1976 to 3.5 in 2012 (but has remained relatively steady since then). The emphasis on service delivery and quality of care has been significant and has shown results. However, high investments and good progress in health outcomes have resulted in complacency with a health system in risk of being insolvent and bankrupt. In order to ensure sustainability, significant effort must be directed toward understanding the various factors that impact on health care cost and quality.

Jordan's burden of disease is one dominated by non-communicable diseases (NCDs) and characterized by increasing prevalence of diabetes, hypertension, heart disease and cancers. There is recognition that increasing the provision of promotive, preventive and curative health through a strong primary care system can alleviate the costs associated with delivering services at secondary/tertiary care hospitals.

The Ministry of Health (MOH) unveiled a plan to reform the health sector for the period 2018-2022 on March 7, 2018. The plan has seven major aspects, including primary healthcare, secondary healthcare, health insurance, pharmaceuticals, medical tourism, reliability, quality control and e-health. The plan includes the establishment of an independent health insurance body and entails 131 projects and initiatives worth JOD602.1 million (US\$849 million), which will be covered by funds allocated for the sector in the budget, grants, and loans.

Health insurance coverage is estimated at 55 percent of the 9.5 million population in Jordan. The GOJ, the principal financier of health services, operates two separate insurers, the MOH/Civil Insurance Program (CIP) and the Royal Medical Services/Military Insurance Fund (MIF) that, combined, cover 82.2 percent of insured Jordanians (approximately 45% of the population). Non-insured Jordanians must pay fees for health services during an event of sickness either in public facilities or by attending private providers.

The Government of Jordan (GOJ) is facing a severe financial crisis in attempting to meet the health care needs of the population. Due to inefficiencies in service delivery, fragmented financial (insurance) and delivery systems, inability to properly control utilization, and growing demand from refugees among other things, the GOJ currently has a health services debt that exceeds 442 million JD as of the end of 2017. This includes 342.5 million JD that was accumulated through the end of 2016 with an additional 100 million JD added in 2017 alone (representing a 30% increase). The major areas that contribute to this debt include the high cost of exemption treatment referred by the Royal Court and Cabinet, the cost of drugs purchased through the Joint Procurement Department, and the increasing costs to provide dialysis through the Renal Failure Fund.

The GOJ is taking action to reduce arrears that includes freeing additional resources to cover previous and projected future debt. This includes allocating in the Ministry of Finance 2018 budget under item 320 (payments for previous obligations) the sum of 360 million JD, and for years 2019 and 2020, allocating 429 million and 244 million JD respectively for that purpose. Furthermore, the Prime Minister has issued a memo requesting from the MOF and MOH to refer patients to the MOH hospitals and not to send them to private hospitals unless the treatment is unavailable in the MOH hospital and to ensure that new procedures are used for the Royal Court referrals to make sure treatments are for poor patients only. Together these actions are a very positive step, but much work must still be done to improve health system function and financial management to establish a sustainable system.

Overall Jordan's public health system is suffering from limited resources and a chronic financial deficit, which makes the outlook of providing sustainable health services that meet the health needs of the population extremely difficult. This is further compounded by the influx of refugees, primarily from Syria. Estimates from different sources paint a huge problem in finding the financial resources to meet the needs of refugees. For the MOH services alone, it is estimated that an additional 120 million JD will be required annually of which only 40 million has been allocated from internal and external sources. The total cost for providing services to all Syrian refugees at MOH and non-MOH facilities is estimated to be between 307 million JD (NHA data analysis) and 385 million JD (joint UNICEF/MOH study). This expands the deficit to more than 300 million JD.

III. Analysis of Cost and Revenue Drivers

USAID through its Health Finance and Governance (HFG) Activity developed this background paper on financial flows to the health sector that would take stock of revenue and costs to look at potential efficiency gains that could be enacted to help lower costs. This paper will be discussed during a round table discussion with health donors organized by the Ministry of Planning and International Cooperation (MOPIC).

USAID's HFG Activity has two primary objectives in support of the GOJ's UHC goal. These include: (1) Increased spending efficiency of public resources for health to ensure long term sustainability; and (2) Strengthened governance of the health sector at both national and subnational levels to more effectively coordinate, plan, manage, and monitor the health system. The objective of this background document is to describe financial flows to the health sector including revenue and cost drivers with focus on potential efficiency gains and some specific reforms in the health sector that if enacted would help to control costs.

To evaluate the financial flows into the public healthcare system, HFG identified 5 revenue drivers and 11 cost drivers. HFG believes that these 16 combined drivers, if improved, would promote an optimised cost structure and enhanced revenue resulting in a resilient and sustainable public healthcare sector.

HFG's analysis identified a wide variety of possible interventions ranging from changes in law and regulatory practices which could be realized in the short term to efforts focused on changing population behaviour and shifting utilization patterns which will only be impactful over a longer period of time. Because of this we have limited our estimates of the effort required to realize change and the resulting impact on the health system to a relative comparison (i.e. impact as return on investment conservatively defined as low = 5 to 25 million JD annually, medium = 25 to 75 million JD annually, and high = greater than 75 million JD annually) rather than including defined financial projections. For several interventions, estimates of the cost or revenue benefit have been provided where reliable information is available. However, for any intervention, a detailed analysis must be performed that includes a defined plan for implementation and considers all costs required to properly realize change. For many proposed interventions this may also include a commitment from the GOJ to cover changes in operational and administrative costs. All interventions will require a different time table for implementation and will take a variable amount of time before full impact will be seen. Because of these complexities, determining true cost and return on investment is beyond the scope of this document.

While providing detailed cost and return on investment for specific interventions is not included here, HFG's analysis indicates that there is much room for improvement and reducing financial burden. Table 1 and Table 2 (below) provides a summary of the situational analysis, proposed strategic interventions, and the relative quantification of impact for each of the 5 revenue drivers and 11 cost drivers that were a focus of this work. A more detailed discussion of each driver follows.

TABLE 1: SUMMARY OF REVENUE DRIVERS, INTERVENTIONS AND RELATIVE IMPACT

Revenue Drivers	Potential Strategic Interventions	Potential Impact
1) Medical Tourism	<ul style="list-style-type: none"> Implement a marketing strategy for Jordanian health services Implement laws and regulations that protect patients and providers (Medical Mal practice law) Collaboration with businesses that will benefit from tourism (airlines, hotels) Internationally recognized accreditation of facilities to increase brand value Simplify visa and entry process for foreigners seeking medical care 	MEDIUM
2) Optimize Insurance Premiums	<ul style="list-style-type: none"> Increase monthly contributions to the public-sector insurance pools Incorporate a model for insurance that includes a risk pool approach and is linked to actuarial analysis to set premiums and service prices 	MEDIUM TO HIGH
3) Expanding Insurance Coverage	<ul style="list-style-type: none"> Incorporate a model for insurance that includes a risk pool approach and is linked to actuarial analysis to set premiums and service prices Encourage the SSC to play a bigger role in insuring employees and their families Limit the categories of people that are not required to have insurance Expand categories of people where insurance is mandatory Grey market workers (informal sector) are encouraged to register with CIP 	VERY HIGH
4) International and Local Donations Supporting Vulnerable Populations	<ul style="list-style-type: none"> Increase donations from local and international agencies supporting refugees and vulnerable families 	MEDIUM

5) Regulations and Laws to Right-size Revenue	<ul style="list-style-type: none"> • Revisit legislation on healthcare pricing: codes, fee schedule • Must proceed in conjunction with optimizing cost structure in the public sector • Expand revenue from sugar tax, tobacco tax, and alcohol tax (before implementation political consequences should be assessed) 	MEDIUM
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TABLE 2: SUMMARY OF COST DRIVERS, INTERVENTIONS AND RELATIVE IMPACT

Cost Drivers	Potential Strategic Interventions	Potential Impact
1) Medicine Cost	<ul style="list-style-type: none"> • Implement clinical protocols to reduce over prescription • Establish a rationalized drug list • Improve supply chain management • Shift to generic instead of branded where possible 	MEDIUM
2) Traffic Re-engineering	<ul style="list-style-type: none"> • Shift utilization to increase patient use of PHC services • BCC activities to influence patients' behavior to increase clinic use 	LOW TO MEDIUM
	<ul style="list-style-type: none"> • Improve quality of PHC • Incorporate financial disincentives (fees) to use secondary services without referrals 	HIGH TO VERY HIGH LONG - TERM
3) Capital Expenditures Projects	<ul style="list-style-type: none"> • Base strategy and decisions on mapping of needed services and facilities • Use service contracting to the private sector and other public partners to fill service gaps 	HIGH TO VERY HIGH
4) Electricity Cost	<ul style="list-style-type: none"> • Shift to solar panels & apply energy saving methods 	LOW MEDIUM LONG-TERM
5) Regulation and Laws to Optimize Cost	<ul style="list-style-type: none"> • Ensure that insurers use a risk pool approach and actuarial models to determine eligibility and pricing • Revisit legislation on healthcare pricing: codes, fee schedule • Force insurers to provide an Essential Package of Services 	MEDIUM
6) e-Health & Digitization	<ul style="list-style-type: none"> • Hakeem Initiative for Computing Patients' Medical and Financial Files • Program for Smart Management of Care Providers • Disease Monitoring Program • Paperless Government Initiative 	MEDIUM TO HIGH
7) Human Resources Efficiency	<ul style="list-style-type: none"> • Improve staff through training • Improve selection criteria of staff and link ongoing employment to certification and continuing education and development • Linking performance to compensation • Increase investment in PHC staff • Invest in systems to improve efficiency and automate administrative process to reduce staff levels where applicable 	MEDIUM
8) Quality Control & Treatment Protocols	<ul style="list-style-type: none"> • Demand that providers deliver services that adhere to diagnostic and treatment protocols approved by professional societies and meet international best practice standards 	MEDIUM TO HIGH

9) Reduce Impact of NCDs	<ul style="list-style-type: none"> • Improve PHC capacity to diagnose and treat NCDs • Community education & awareness on NCDs (behavior change) • Incorporate improved mental health services at the PHC level • This requires an integrated effort of supply and demand side interventions at both facility (PHC) and community level. • BCC interventions to convey the importance of healthy lifestyles in preventing NCDs are essential in this area. 	<p>LOW TO MEDIUM</p> <p>HIGH LONG - TERM</p>
10) Improving Public Health Governance	<ul style="list-style-type: none"> • Incorporate a payer model based on best practice and that is applicable to all public providers • Strengthen the role of the HHC of coordinating interventions, monitoring, and setting policies for the health system • Support decentralization programs (both national and subnational levels) • Improve information systems and strengthen decision support • Improve governance and management of the public health insurance programs which may include establishing a common fund and an autonomous regulatory body 	MEDIUM
11) Strategic Purchasing	<ul style="list-style-type: none"> • Separate roles of provider and purchaser • Adopt purchasing models that link payment with performance • Promote PPPs to contract out for services to meet surge demand • Apply best practices in volume purchasing for drugs and consumables 	MEDIUM

Revenue Drivers (Resources into the Health Sector)

Revenue Driver # 1: Medical Tourism

Medical tourism in Jordan used to play a significant role in supporting the economy. As per the health sector reform plan, Jordan enjoyed 1.2 billion JD in revenue in 2015 from medical tourism. Nevertheless, Jordan's leading role in the region as a medical tourism hub has been affected due to several factors amongst them the rise of Turkey's medical tourism, the low budget and investments in marketing Jordan's medical tourism, and the political instability in neighbouring countries, resulting in lower traffic of patients visiting the country.

Some strategic interventions that would support increases in medical tourism include the passing of certain laws, simplifying the visa process for international patients, allocation of bigger budgets supporting medical tourism and the marketing of Jordan as a medical hub, quality control and accreditation of primary and secondary facilities, and finally creating partnerships and collaboration with other entities such as the Royal Jordanian airlines to promote Jordan as a medical tourism destination.

The government would benefit from investing in medical tourism through adopting the above mentioned strategic interventions that would support robust medical tourism and improved revenue in the healthcare sector. This would provide support to the private sector primarily but would also help to offset total costs that may be realized through public private partnerships with the MOH. As a secondary benefit, direct tax (sales tax) and indirect tax (income tax) could be generated based on an increasing number of foreign patients seeking medical treatment in the country.

Revenue Driver # 2: Optimize Insurance Premiums

82% of insured Jordanians are covered under the CIP and the MIF. Payroll contributions from both civil and military servants and retirees with their families are very minimal and do not cover the cost of health services. Pricing is not based on true service cost and is not integrated into a larger funding system for insurance that includes risk pooling or uses actuarial information to inform insurance pricing or payment

for services. In 2016, revenues from the payroll contributions for the CIP didn't exceed 67 M JDs, while MIF were only around 12M JDs.

There are several strategic interventions that would increase revenues in this regard. On the short term; increase the monthly payroll contribution for both the civil and military servants' employees and retirees. Enforce more salary contribution for high officials and higher salaries, to improve the concept of risk pooling where the advantaged subsidizes the disadvantaged, such as the rich subsidizes the poor.

On the mid-term: to consider the age groups and demographics to calculate pricing of premiums. Go through the underwriting process into calculating premiums and consider the health status of the participants. Implementing the premiums based on age groups will improve the risk pooling concept. In addition, conducting actuarial studies and assessments to determine costs of premiums and services.

Revenue Driver # 3: Expanding Insurance Coverage

68% of Jordanians are insured, leaving 2.5M Jordanians without health insurance. These are distributed between self-employed, private sector and school students as well as the families of private employees according to the Social Security Corporation (SSC).

Although these uninsured Jordanians can still have access to MOH facilities and the GOJ provides hugely subsidized rates. The MOH still provides free health services to children under 6 and to the elderly above 60 where premiums for such categories are covered by the General Budget Department. Refugees are a separate group with the vast majority not having insurance and being forced to pay 80% of the unified rate set at the MOH. If proper and affordable service packages can be developed for these uninsured, it can have a dramatic shift in revenue and cost.

There are several strategic interventions that can support expanded participation in insurance programs. The introduction of an Essential Package of Health Service (EPHS) at the CIP for all the insured, and anyone planning to be insured will help to clarify the value of the program and build consistency in service delivery. Implementing the risk pooling concept for insurance will establish a solid foundation for setting premiums and linking revenue to cost. Promote mechanisms whereby the SSC can play a bigger role in insuring the private employees and their families through the CIP program will further stabilize revenue and make it easier for families to participate. For refugees, the MOH should work with UNHCR to agree on a system whereby refugees can be covered under the CIP program with premium support to be provided by UNHCR and other donors.

Revenue Driver # 4: International and Local Donations Supporting Vulnerable Populations

The current situation in Jordan with regards to international and local donations to support refugees and vulnerable populations is characterized by a huge increase in population and the inability of the health system to meet the demands of this increase. The Jordanian population is estimated at about 10 million with 3 million of those people coming from outside of Jordan (ie Iraq). This includes about 1.3 million Syrian refugees.

The Syrian refugee problem is persistent with about 21% living in camps and 79% living in urban areas. Most refugees are needy and provide a severe drain on resources. To help offset this cost, many external sources have committed to providing funds specifically for refugee services. Unfortunately, the cost for refugees is estimated to be about 2.65 billion US Dollars of which only about 65% of these funds have been received. This puts an extreme burden on the GOJ if it intends to meet the needs of refugees and its own vulnerable population.

The Jordan Response Plan in 2017, estimated the health care budget requirements for the Syrian Refugees at about 120 million JD. It has received and allocated about 87 million JD included 5.5 million JD from GOJ. This results in a 33 million JD deficit for 2017 adding in budget for resiliency at 50 million JD this results in a total unmet cost of 83 million JD (MOH budget analysis).

The MOH and GOJ must work to sustain international solidarity and increased financial support for the Syrian refugee crisis. In conjunction, the Ministry of Social Development should work to increase local donations supporting the broader, vulnerable population within Jordan. It must be recognized that revenue from donations is not a recurrent source. Further, it might reinforce health system dependency on external

support and inhibit the increase in public spending. To circumvent this, the MOH must in parallel develop mechanisms to support the sustainable provision of services to match population increases.

Revenue Driver # 5: Regulations & Laws to Right-size Revenue

Currently, there are fifteen different legislations that assign various processes for setting and approving fee schedules in Jordan. The existing processes do not ensure transparency and accountability, and are often inaccessible to the public, including the beneficiaries of the programs.

One specific legislation, the Regulation of Civil Health Insurance Fund (2004), specifically requires the Cabinet to review the fee schedule on annual basis to reach the 'actual cost' within five years. No review of the fee schedules has taken place at the time of writing.

This is leading to discrepancies in fee schedules within public sector insurers. The potential results thereof could significantly optimize the costs, if implemented. For instance, MOH fee for normal delivery is set at an average of 50JD, compared to an average of 500 JD at the King Abdullah University Hospital. In 2016, MOH had missed out on more than 32,000,000 JDs annually. (2016 MOH statistics book)

To optimize costs, future strategic interventions should revolve around reconsidering and revising legislation on health care pricing. First, it should be determined how many fee schedules are needed. Secondly, one, singular health services code should be established and then adopted. Third, a method for measuring resource inputs should be agreed upon and established. Fourthly, a conversion rate must also be agreed upon and established. Lastly, those fee schedules agreed upon beforehand should be made accessible to the public and published online. After these interventions are implemented, the GOJ should establish an oversight body to be monitored and (re-)approved on some regular basis.

Cost Drivers

Cost Driver # 1: Medicine Cost

Medicine cost represents at least 25% (est. 582 M JD) of total health expenditures in Jordan. Therefore, an optimization of medicine cost will have a significant impact on the overall healthcare cost. Currently, there are several factors affecting medicine costs such as the use of branded medicine instead of generics, uncontrolled prescription of medicine, lack of medicine rationalization, population growth, medicine price inflation and the increase of chronic diseases and related long-term medicine costs.

There are several strategic interventions that would have significant financial impact. First, improving supply chain practices such as inventory control, procurement practices, bulk purchases negotiation and lean management will impact overall efficiency. Second, rationalization of the drug list will reduce the number of drugs and simplify cost control. Third, strategically shift the market towards generic medicine rather than branded medicine. Fourth, establish and implement clinical guidelines to control excessive prescription of drugs.

The public sector's share of total pharmaceutical health expenditures is 45% (est. 262 M JD), and around 11.74% out of total health expenditure, as per NHA 2015. Therefore, an optimization of cost based on the previous suggested strategic interventions combined would lead to an estimate of potential efficiency savings of 10%-25% in medicine cost, as per NHA database; WHO, 2009. If we apply the conservative low range of 10%-12%, this leads to roughly 30 Million JD savings for the public sector's medicine expenditures annually.

Cost Driver # 2: Traffic Re-engineering

In Jordan, it is common to go to a hospital directly instead of visiting a primary care clinic for a first visit. Emergency rooms are clogged with non-urgent cases, which is an inefficient use of a specialist's time. Overuse of hospitals due to the bypassing of primary health clinics is a widespread problem in developing economies. Because of the general perception that primary care facilities do not offer a sufficient level of quality of care, patients prefer to visit hospitals where they can be seen by specialists.

Several strategic interventions if implemented would lead to cost optimization. First, improving the quality of primary care clinics (accreditation, re-distribution of healthcare specialists, and relicensing/specialization of physicians). It is essential that increased use of PHC services is directly linked to improving quality of care and problem-solving capacity at the PHC level and connecting that to improved referral networks and secondary services. Second, due to the cultural perception that services offered at primary care clinics are of lower quality, behavioural change communication (BCC) interventions will be required. Finally, to preserve primary care's gatekeeper function, hospital attendance without a referral should be restricted by creating disincentives to go directly to secondary facilities or seek care outside of the primary care system.

The number or percentage of avoidable hospitals' admissions is a good indicator for the potential impact of traffic re-engineering to reduce cost of health services. The potential range of efficiency gains or savings (percentage of total health spending) from a focus on this area is estimated generally to be from 5 -11%. The potential benefit in cost savings to the Jordanian health system is conservatively estimated at 5%. (Ref. Allocative Efficiency Study HFG 2017, and WHO NHA 2009).

Cost Driver # 3: Capital Expenditure Projects

The MOH oversees 32 hospitals throughout the Kingdom with a total of 5,177 available beds; however, only 65.8% of those beds are on average occupied. Similar low occupancy rates also exist within the private sector (50% occupancy with 4,496 beds in 62 hospitals). The Royal Medical Services, as well as other entities, also experience similar low occupancy rates.

Despite this, the MOH has allocated a total of 231 million JOD for the capital expenditures of both primary health care centers (i.e., 61 million JOD) and secondary health care centers (i.e., 170 million JOD) between 2016 and 2020. An examination of the latter provides an opportunity to better understand the inefficient use of funds and significantly reduce capital expenditures. For instance, included within the secondary health care expenditures are funds for the construction of new facilities throughout the Kingdom: Salt Hospital (i.e., a cost of 52 million JOD); Princess Basma Hospital (i.e., a cost of 60 million JOD); Tafleh Hospital (i.e., a cost of 10 million JOD), and finally Princess Iman Ajloun (i.e., a cost of 35 million JOD). The construction of these facilities does not appear to be based on a thorough analysis of need nor to be part of a national plan for service delivery and expansion. Excess of facilities will further drive down occupancy rates across the country, leading to a decrease in revenue, while simultaneously magnifying the cost of capital and recurrent expenditures. In brief, the private sector and public sector will not benefit with further expansion of facilities. Efforts must be made to effectively understand, and map services needed versus services provided and use this to develop a master plan for both facilities and services that will inform decisions on capital expenditures.

To reduce capital expenditures in the short-term, several strategic interventions can be implemented to reutilize already existing facilities and services, while also revitalizing the cooperation of other health sector entities with the Ministry. First, facilities already existing within the general vicinities of the proposed construction sites should be reutilized to service a greater portion of the population, especially in rural areas. Stronger bilateral partnerships between the Ministry and Royal Medical Services, as well as the teaching hospitals, must therefore be established to support this intervention. Second, health care facilities can be rationalized through, for instance, merging facilities or closing existing facilities based on the needs of the facility and the population it serves. Finally, funds originally allocated for capital expenditures can be reutilized to establish public-private partnerships through leasing private facilities and/or contracting services at the primary and secondary levels of care.

Cost Driver # 4: Electricity Cost

Public health facilities have electricity costs totalling more than 17 Million JD annually. That amount is increasing due to continuous revision and increase of tariffs. Hospitals pay an average of 0.262 JD/KWh and clinics pay 0.185 JD/KWh. Utilities are not audited to improve electricity cost efficiency or to lower consumption. Electricity prices are increasing at an average of 2.5% annually.

The climate for investment in renewable energy is encouraging, as the Central Bank of Jordan offers low interest rates for financing solar projects and foreign investment companies offer financing or lease to own agreements for Solar PV projects due to its very attractive financial feasibility.

There are several strategic interventions that would lead to an optimized electricity cost. Exploring energy savings methods for clinics and hospitals (LED, AC, Insulation, etc....) and installing solar PV panels to offset consumption would have a clear impact on cost.

Implementing these interventions could see a reduction in electricity expenditures from 17 Million JD annually to 3.4 Million JD annually, and the energy consumption is expected to go down from roughly 85 GWh to 68 GWh. Note that these figures and analysis were done through the support of a specialized renewable energy consulting firm, after studying the healthcare landscape and analysing several case studies such as one conducted with Prince Hamza Hospital.

Cost Driver # 5: Regulations and Laws to Optimize Cost

The current legislation offers both push and pull factors that allow private insurers to refer the risk-ridden and sick to the public sector. A private insurer has discretion to eliminate coverage of certain treatments for individuals over 50 years (e.g., insulin) and automatically denies individuals over 65 years. In other words, the burden of covering non-communicable diseases can shift from the private insurers to public insurers, however, unlike their private counterparts, public insurers do not have the luxury of accumulating previous premiums.

Strategic interventions must be taken to revise the insurance law. Further steps should, also, be taken to disallow the “adverse selection” of consumers. For instance, a private health insurer can favor enrolling those with a better health status and lower-risk profile or charge higher rates to those who are sick or considered to be a part of high-risk groups. Such discrimination in “adverse selection” merits penalizing private insurers in the form of levied taxes or other means. Secondly, the Civil Health Insurance Legislation should be revised to ensure that voluntary membership is accompanied by waiting periods. In doing so, members of the Civil Health Insurance Fund will be further protected when joining the fund at the point at which they require high cost of treatment. Lastly, an essential health services package should be created that is uniform across public and private insurers and costed.

Cost Driver # 6: E-Health & Digitization

The Kingdom has recently witnessed an increasing interest in digital transformation based on the Royal Vision as an essential and necessary result to keep abreast with the developments in the field of information and communication technology due to its key role in improving the efficiency and effectiveness of services and its impact on improving citizens' lives. Many key digital transformation initiatives have been launched in the health sector, such as the Hakeem Initiative for Computing Patients' Medical and Financial Files, and the Paperless Government Initiative. Despite the presence of these initiatives, the implementation of digital transformation plans in the health sector faces many obstacles limiting the speed of performance as required.

The strategic interventions should encourage the Initiatives and programs to be implemented for informed decision-making, such as further implementation of Hakeem Program/HER, Paperless institution initiatives, Electronic Data Supervision Program of Hakeem Program (standardize the definition and coding of the basic electronic data for decision making in the health sector), Smart Management Program through Hakeem Program (providing measurement tools, performance indicators and command boards through the information obtained from Hakeem Program. The program is beneficial for the concerned decision makers in health care facilities where Hakeem Program has been implemented), Program for Smart Management of Health Insurance Claims and Procedures, Elm Initiative (an initiative to establish the Jordan Electronic Library of Medicine), Hakeem Academy Initiative, Data Exchange Program (the program allows the exchange of basic data of the patient to be agreed upon with the relevant institutions through Hakeem databases), disease monitoring program (a program under the supervision and implementation of the World Health Organization to monitor the diseases diagnosed by health care providers in the various health sector institutions.)

Cost Driver # 7: Human Resources Efficiency

Human resources cost represents approximately 65% of the total MOH budget. Therefore, redistribution of human resources will have a significant impact on overall human resources cost and is a top priority.

Currently, there are several factors affecting the cost of medical and non-medical staff in the MOH such as weak linkage between performance and compensation, low productivity, and high turnover rates.

Several strategic interventions would lead to improve the quality of services and reduce the cost of human resources. First, attract qualified and trained technical cadre. Second, shifting the human resources investment to primary health care in parallel with efforts that shift utilization. Third, upgrade the efficiency of the ministry's existing cadre, increase the human resources development program, reforming staff incentives and linking it performance. Finally, the MOH should invest in building the capacity of the managers across the ministry, and support where possible the automation of the administrative, financial, and technical functions to decrease overall staff numbers and cost.

Cost Driver # 8: Quality Control and Treatment Protocols

Guidelines and treatment protocols for physicians exist but are not always followed in the public sector. Enforcement is challenging, which results in variations in quality of services offered. The public perception is that good physicians are those that give out prescriptions, rather than for instance a quality diagnosis without a prescription for drugs as a result. That means that physicians have an incentive to prescribe drugs for as many patients as possible in a short timeframe. The pressure to meet population demand for short waiting times and prescriptions causes overprescribing of drugs, and possibly incorrect diagnosis. There is also excessive use of diagnostic services at both the primary and secondary levels that is not linked to clinical best practice nor supported within approved clinical guidelines.

Several initiatives are currently supporting establishing or improving clinical guidelines in various specialty areas. These should be expanded and reinforced by setting and following regulations demanding health care providers adhere to best practice standards. Medical auditing and enforcing the application of approved guidelines will ultimately reduce the cost and increase the efficiency of the health care system. The estimated efficiency gains as a percentage of the cost savings after the broad application of clinical guidelines and protocols is from 10 -20 %. Within the Jordanian system, this could meet or exceed a 10% savings (source NHA data base, WHO 2009). The proposed interventions are essential not just to reduce costs but to maximize health outcomes.

Cost Driver # 9: Reduce Impact of Noncommunicable Diseases (NCDs)

NCDs threaten progress towards the 2030 Agenda for Sustainable Development, which includes a target of reducing premature deaths from NCDs by one-third by 2030 (WHO Noncommunicable diseases Fact sheet, 2017). Life-style risks, including unhealthy diet, tobacco use, and physical inactivity and related epidemiological changes will increase health care demands in the future.

There are several strategic interventions that would lead to reduced health sector cost. Improving the quality of clinical services will be important to successfully improve NCD outcomes and reducing the burden of disease. Increasing BCC programs in health education and community awareness campaigns on risk factors of non-communicable diseases (such as smoking, obesity, unhealthy diet, and physical inactivity) will change behaviour and reduced overall need for services. Integrating mental health into primary health care and promoting mental well-being through community programs and education will impact NCD development. Together this requires an integrated effort of supply and demand side interventions at both facility (PHC) and community level. BCC interventions to convey the importance of healthy lifestyles in preventing NCDs are essential in this area.

Cost Driver # 10: Improving Public Health Governance

Currently there are high administrative costs in the health sector and inefficiencies in the production of health services due to the existence of multiple public health care payers with different regulations. In addition, the High Health Council (HHC) has a limited role to coordinate health system strengthening initiatives and evaluate, formulate and coordinate policies across the health sector. In addition, the MOH has poor segregation of responsibilities as it serves as a provider, payer and regulator. This is not conducive to creating the needed objectivity or checks and balances for governing the health system.

There are several strategic interventions that would lead to an optimized restructuring for public health institutions. An appropriate payer model should be selected which is based on a thorough examination of the legislative framework and current public and private health insurance models. The HHC should be strengthened to coordinate health system strengthening initiatives and evaluate, formulate and coordinate policies across the health sector as an umbrella organization for the entire health sector. Improvements should be made in health sector leadership, coordination and multi-sectoral engagement. Support for decentralization through strengthening capacity and authority to govern the health sector at sub-national levels will increase efficiency and create a more responsive health system. Investing in information systems to produce high quality data which will be used to produce informed decisions will be impactful at all levels.

Cost Driver # 11: Strategic Purchasing

Drugs and medical consumables represents at least 18% (99 M JOD) of the total MOH budget. 90% of MOH purchasing is through the Joint Procurement Department (JPD). As indicated previously, drug purchases through the JPD have added significantly to the health services debt and continue to be poorly controlled and managed.

As an option to meet health service needs and better utilize national resources, the MOH and RMS have had some limited relationship in sharing services and moving patients between service points managed by each other. This same method can be utilized with the MOH and RMS in engaging private providers when the cost of standing up needed services is greater than purchasing these services that already exist.

Several interventions that improve strategic purchasing can reduce the cost of service provision. The MOH must ensure separation of service provider and purchaser activities to improve provider accountability and efficiency and shift resources to more cost-effective health interventions. The GOJ should adopt strategic purchasing models with reimbursement schemes that underlie performance. The MOH and main stakeholders should collectively decide on which health services should be purchased and how these services will be purchased and from which provider when considering service availability and the quality of private providers. In addition, the ministry should promote public-private partnerships through strategic purchasing for ancillary services.

For drug purchasing, the MOH should establish a proper supply chain management system that includes measures of the stock of drugs and consumables and accurately estimates use on a facility basis. Volume discounts for drug purchases should be optimized and systems developed to maximize input from all providers to increase efficiency.

IV. Recommendations

The analysis of cost and revenue drivers has identified many areas that if properly addressed can have a major impact on health finance and promote sustainable Universal Health Coverage. However, in order to achieve this and direct resources effectively, the GOJ must have the ability to properly monitor and assess the effect of interventions. The regular evaluation of efficiency improvements is now recognized as a major source of untapped fiscal space in health care expansion. Improving public financial management and identifying bottlenecks in budget formulation and execution can provide a solid basis for discussions of fiscal space expansion with finance authorities. Assessing efficiency should be carried out as regular updates. This will require linking assessments with budget processes to impact allocation decisions more effectively. To achieve this, the GOJ must:

1. Establish accurate and responsive systems to collect timely data on health care utilization, health care spending, and revenue sources
2. Build capacity of staff and systems at the national and subnational levels to support finance and governance, strategic planning, and decision making

Many of the cost and revenue drivers discussed previously impact on or are affected by these two critical systems elements. It is recognized that much current work is ongoing to improve these systems and progress is being made. However, several critical gaps in information collection and decision support have been identified that should be addressed more aggressively and relate to specific drivers. These include:

1. Develop a national health service and facility map that links to health needs and informs all decisions on facility expansion and utilization (Cost Drivers 2, 3, 7, and 10)
2. Ensure that the GOJ has access to clinical data and utilization and that it is linked to cost (Cost Drivers 1, 6, 7, 10, and 11)
3. Improve operations by implementing sound public financing management to ensure accountability and efficiency in the management of public resources, critical to the achievement of public policy objectives and the Sustainable Development Goals .

Without investing in these two areas, it will be very difficult to make informed decisions or to measure effectiveness and overall benefit of interventions.

Coupled with the recognition of decision support gaps and investing in improvement in the above areas, it must be acknowledged that any well-designed investment in any of the drivers described will have a measurable positive effect in either reducing cost or increasing revenue. However, the GOJ should focus energy on interventions that have the largest and most immediate impact on health finance and synergize or compliment other cost and revenue drivers. Based on our analysis, we propose the following as interventions that can provide the largest return on investment:

1. Increase efficiency and coverage of public and private insurance programs. This includes shifting systems to inclusion of risk pooling and setting premiums and payment for services based on actuarial studies and best practice models. Initiatives to expand inclusion of a broader segment of the population will promote sustainable UHC (synergizes/compliments Cost Drivers 5 and 10 and Revenue Drivers 2, 3, and 5)
2. Incorporate a master planning system that maps health needs (services, facilities, personnel) to inform all decisions related to allocating resources and investing in health care expansion (directly relates to item 1 above and synergizes/compliments Cost Drivers 3, 4, 7, 10, and 11 and Revenue Driver 1). The mapping of health needs will also help identify inefficiencies and setting baseline performance indicators.
3. Invest in shifting utilization toward primary health care and in public health initiatives and education to promote PHC clinic use, improve health, and reduce the incidence of noncommunicable diseases (synergizes/compliments Cost Drivers 1, 2, 7, 8, 9, and 10 and Revenue Driver 2)

In order to effect change many things must be addressed. The above 3 key interventional areas will require a clear understanding of the current system and a detailed plan to achieve results. This will require a wide range of specific interventions that fall under the major ones described here. For example, any investment in the system will necessarily require investment in human resources development, capacity building of both staff and systems, new or revised laws and regulations to solidify change, changes in institutional roles at the national and subnational levels, and broad engagement of the community served by the system. Many programs are currently working to support these high-level changes. By better understanding the dynamics that health finance has in the system, it is envisioned that a clear path will be established that can guide GOJ investment.