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ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
AEP	Appropriate Evaluation Protocol
ART	Antiretroviral therapy
CEA	Cost-Effectiveness Analysis
DEA	Data Envelopment Analysis
DHS	Department of Health Statistics
GDP	Gross Domestic Product
GNI	Gross National Income
GP	General Practitioner
HFG	USAID Health Finance and Governance
HIV	Human Immunodeficiency Virus
ISD-A	Intensity-Severity-Discharge-Appropriateness
JOD	Jordanian Dinar
MNH	Maternal and New-born Health
MOH	Ministry of Health
NCDs	Noncommunicable Diseases
NHA	National Health Accounts
PHC	Primary Health Care
PHC	Primary Health Care
pop	Population
QALYs	Quality-Adjusted Life Years
RMNCH	Reproductive, Maternal, Newborn And Child Health
STIs	Sexually Transmitted Infections
TB	Tuberculosis
UHC	Universal Health Coverage
USAID	United States Agency for International Development
WHO	World Health Organization

EXECUTIVE SUMMARY

In order to finance Jordan's commitment to achieve universal health coverage (UHC), it will not only need to mobilize more resources for the health sector, but also improve efficiency in the delivery of health services.

Jordan is struggling with a number of efficiency issues in health financing. For example, budgeting is done only at the central level, which is not based on needs, public insurance packages and premiums are not based on the cost of services, and staff incentives are not linked to performance. Additionally, primary healthcare facilities are bypassed as directly seeing a specialist in a hospital is preferred.

Therefore, although healthcare providers may sometimes behave allocatively efficient by meeting population demand, this does not always lead to the most cost-effective outcomes which would maximize overall population health.

In order to quantify the extent to which a health system is efficient, routine data on expenditures and use of services at health facilities is required, which is currently not available in Jordan. Health information systems would need to be improved to better monitor performance. This study looked at efficiency issues in the Jordanian public health system, the data and systems requirements needed to assess allocative efficiency on an ongoing basis, and provides recommendations for policy changes that could improve efficiency in the Jordanian public health sector.

I. INTRODUCTION

The USAID Health Finance and Governance Activity (HFG) aims to improve health sector sustainability and resilience in Jordan. The activity supports Jordan’s commitment to UHC declared in its National Health Strategy 2016-2020 (“to provide health, financial and social protection to the entire population on a fair basis”)¹.

Jordan’s health expenditures are expected to increase dramatically, and growth in health spending is already outpacing growth in GDP according to trends for the past years drawing on data from the National Health Accounts (Figure 1).

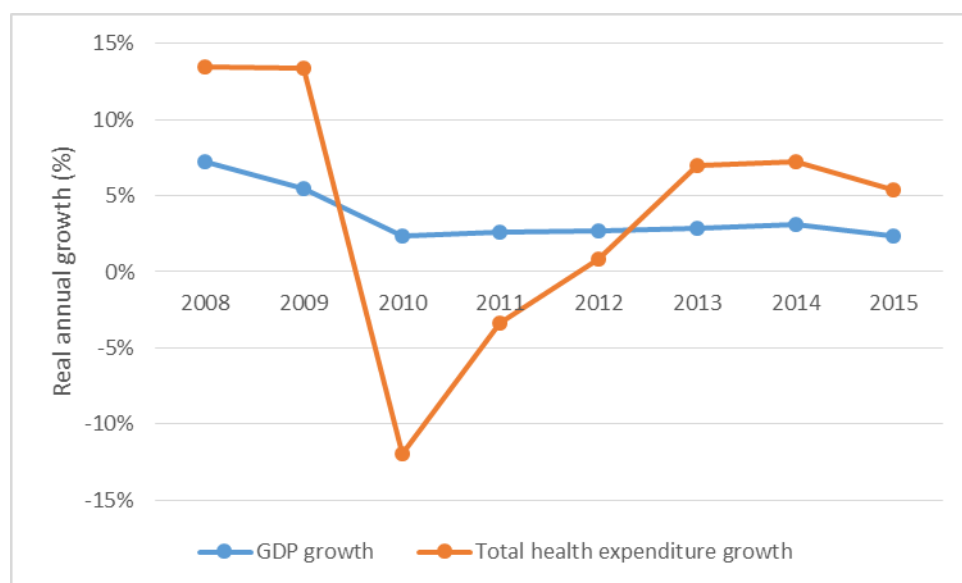


Figure 1 – Real growth in GDP² and total health expenditure since the NHA started in 2007³

Economic growth is expected to remain slow over the coming years, and fiscal space for health is likely to be limited⁴. Therefore, achieving UHC will not only require an increase in revenue for the health sector, but also improved efficiency to deliver better health services to the entire population (both Jordanians and non-Jordanians).

The efficient use of resources requires health services to be provided using the least cost combination of inputs (technical efficiency), and the mix of health services offered to be such that it is optimal, given the population’s demand for health services (allocative efficiency). However, the mix of health services most wanted by the population might not be those that maximize health impact. In the Jordanian context, relatively high usage of hospital services versus primary care is often mentioned as a sign that greater health outcomes could be achieved if the demand for primary and preventive healthcare services were higher⁴.

The objectives of this study are: to assess the degree to which the Jordanian public health system is setup to produce efficient outcomes, to outline the data and systems requirements needed to assess allocative efficiency on an ongoing basis, and to recommend policy changes for efficiency improvements.

2. EFFICIENCY IN THE HEALTH SECTOR

Inefficiency can cause people to be denied improved health outcomes that may have been possible if resources had been better used. When a gap exists between what services people could potentially access and what they actually access—with the same invested resources—progress towards improved health outcomes is stymied.

The causes of health system inefficiencies vary depending on a range of contextual factors. Still, it is possible to pinpoint major sources of inefficiency. These often include: inappropriate and ineffective use of medicines, inappropriate mix of health workers, inefficient mix of health interventions, and corruption and fraud. In the 2010 World Health Report, WHO identified 10 leading sources of inefficiency—in which the previously listed examples are included (see Annex I for the full list)⁵.

In 2010, the World Health Report estimated that countries of all income groupings could achieve savings of 20-40% when improving efficiency of health sector spending⁵. The estimates were based on several case studies in low, middle and high-income countries in which the savings were estimated based on potential gains of addressing some of the 10 common causes of inefficiency (see Table 1).

	Low-income	Mid-income	High-income
Human resources	8-15 %	7-14 %	8-16 %
Medicine	3-5 %	2-5 %	2-3 %
Hospitals	4-9 %	5-11 %	3-8 %
Leakages	5-10 %	5-10 %	3-8 %
Intervention mix	10-20 %	10-20 %	10-20 %
Total	20-40 %	20-40 %	20-40 %

Table 1 – Potential range of efficiency savings (percentage of total health spending)⁵

Although this offers an indication of the savings that could be achieved, these estimates must be viewed with caution, as they will highly depend on each country’s context. Some efficiency improvements might be more feasible to achieve in Jordan than others. Diagnosing inefficiencies, and investing in improvements can be very costly. Therefore, the potential savings of efficiency improvements, which might only be achieved in the long run, must outweigh the initial investment required. Where positive efficiency gains are achieved, resources can be reinvested in ways that could improve health outcomes, ultimately contributing to the goal of UHC.

2.1 Definitions of efficiency

Technical efficiency

Measures of efficiency often distinguish between two concepts: technical and allocative. Technical efficiency centers around maximizing outputs for a given level of inputs or minimizing inputs to produce a given level of outputs⁶. If an outcome could be achieved with fewer inputs, then it is technically inefficient. For example, if a community health worker could perform the same service as a higher-paid doctor, it would be technically inefficient for the doctor to perform it. As another example, if a 500mg dose of a medication is as effective as a 1g dose, it would be technically efficient to provide the lower dose⁷. Technical efficiency focuses on resources (capital and labor) and health outcomes. It does not, however, consider equity and quality or user experiences of care.

There may be unintended consequences if a technically efficient service does not align with people’s needs, demands, and behaviors. For example, if a target number of family planning visits is conducted by the lowest possible number of providers, initial costs may be saved in the name of technical efficiency. But if a client felt that she did not receive respectful care, she might choose to avoid the health clinic in the future. In the end, a reliance on what might appear to be a low-input, maximized output solution could result in poor family planning outcomes over the long-term.

Allocative efficiency

Allocative efficiency looks beyond operational performance, and applies a client-centered lens to determine the optimal mix of inputs, interventions, and most appropriate resource delivery channels. This approach considers how resources can be strategically directed to meet population demand for health services. In the health literature, it is often defined as allocating resources such that they maximize health outcomes across a population. However, the demand for health services may differ from those that would achieve the best health outcomes.

In order to determine the optimal supply of health services, allocative efficiency must look beyond inputs and outputs. Epidemiological status, demographics, socioeconomic factors, consumer behaviors, and access barriers should be considered to ensure that the mix of services is responsive to population demand, and meets socio-cultural preferences surrounding service delivery.

Typical sources of allocative inefficiency include poor priority setting, weak clinical guidelines, inappropriate payment mechanisms, inconsistent or partial performance reporting, and poor governance and management⁸.

Doing things right vs. doing the right things

Technical and allocative efficiency are sometimes juxtaposed as 'doing things right' versus 'doing the right things'⁹. Both, however, are intertwined. Technical efficiency is a prerequisite for allocative efficiency—allocative efficiency requires that health outcomes are maximized using a mix of technically efficient health interventions. Health sector inefficiencies usually result from issues with both.

To achieve targeted outcomes, interventions can be optimally allocated either within a fixed budget or to meet defined impact targets. To ensure that this occurs, measures must be put in place to guide and monitor program implementation—this process refers to 'implementation efficiency'¹⁰.

2.2 Efficiency issues in Jordan

Jordan is struggling with a number of efficiency issues in the health sector. Some system design elements are leading to the prevalence of inefficiencies, and prevent it from achieving the best possible health outcomes given the level of resources it has available. The following is a non-exhaustive list of such issues.

Treatment protocols are not consistently implemented

Guidelines and treatment protocols for physicians exist, but are not always followed. 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. One recent study found that doctors spend around 6.8 minutes on average per patient²⁹. Thus, meeting population demand for short waiting times and prescriptions causes overprescribing of drugs, and possibly incorrect diagnoses. Nevertheless, improvements have been made in subscribing generic instead of branded pharmaceuticals, which has reduced the share of expenditure on pharmaceuticals as part of total health expenditure in recent years³.

Public insurance packages and premiums are not based on the cost of services

The premiums charged by the public health insurance schemes are not based on the costs of services, and are set too low to be financially sustainable⁴. Additionally, the services offered as part of the health insurance packages are not based on cost effectiveness analysis. Moreover, a cost effective

essential health benefits package standardized across all public insurance providers will help to address fragmentation.

Centralized budgets which are not based on needs

Although hospitals have been given increasing levels of autonomy, health facilities do not have individual budgets, but get an allocation for medicines, equipment, staff, etc. All expenditures are managed centrally at the Ministry of Health. Therefore, health facility managers have little insight into their operational costs, and have little incentive to contain costs or increase efficiency. In turn, the budgets of the Ministry of Health are mainly based on historical budgets, and not linked to needs nor performance.

Staff incentive payments are not linked to performance

Ministry of Health staff incentives, which are additional to the base salary, are dependent on the degree held and number of years of experience. It is not linked to performance nor to the actual position occupied by an employee. That means that a surgeon in an administrative position, who has not been in the operating theatre for many years, will still be rewarded in line with his initial qualifications.

Low usage of primary healthcare facilities

Instead of visiting a primary care clinic for a first visit, it is common to go to hospitals directly. Therefore, emergency rooms are clogged up with non-urgent cases, which is inefficient use of a specialist's time. Overuse of hospitals due to the bypassing of primary health clinics is a common problem in developing economies, particularly in urban settings¹¹.

3. MEASURING EFFICIENCY

Evidence is the foundation for sound policymaking and management. In order to determine the extent to which health systems are efficient, to inform policy reform, and to track progress over time, efficiency must be measured. The following sections explain a number of commonly used methods and tools used to assess technical and allocative efficiency in the health sector, provides practical examples of such analyses, and the steps required to conduct an allocative efficiency study.

3.1 Methods and tools

Cost-effectiveness analysis

Cost-effectiveness analysis (CEA) is a method used to assess the health gains relative to the costs of different health interventions. A cost-effective intervention is one that achieved the best ‘value for money’ when comparing it to other health interventions. CEA can be used to examine how resources can be allocated across and between inputs. It helps decision-makers compare interventions to design the best combination of services to maximize health outcomes.

While CEA is often applied to small sample sizes, it can be used to compare services or interventions across a health system to determine the optimal mix of services. Since cost-effectiveness is focused on both quality and quantity, it uses quality-adjusted life years (QALYs) as a measurement unit. Its main limitation is data availability. A potential resource, the WHO’s CHOICE project (Choosing Interventions that are Cost Effective)¹², has data on costs, effects, and cost-effectiveness of a range of interventions. However, such indicators might vary greatly per country.

In addition to assessing which services should be offered, CEA can be used to examine whether the appropriate types of care are delivered in the right settings. For instance, it can help determine whether an intervention should be offered as an inpatient or outpatient service. The Appropriate Evaluation Protocol (AEP) and the Intensity-Severity-Discharge-Appropriateness (ISD-A) tools assess setting appropriateness¹³.

A main challenge within CEA is controlling for external factors that impact inputs and outcomes (e.g., patient case mix, environmental challenges, or policy limitations)⁸. An additional challenge is adjusting CEA to align with equity considerations or criteria. CEA analyses are typically focused around comparing competing interventions or tools. Thomas and Chalkidou (2016)¹⁴ argue, however, that for a system-wide allocative efficiency analysis, optimal mixes would have to be generated under different configurations and be responsive to a range of constraints. The authors argue that more research is needed to develop a methodological framework to apply CEA for allocative efficiency analyses of health systems—especially those analyses that are designed with the aim of moving countries towards UHC.

In Jordan, cost-effectiveness analyses could for example be useful in determining the insurance package that provides the best value for money. However, for that it would require data on the cost of each of the interventions included in a possible package, which are not currently available.

Optima model

Many allocative efficiency studies apply the Optima allocative efficiency analysis tool to inform public health investment choices and policy reforms. Optima assesses the burden of disease, specifies the efficacy and effectiveness of interventions, defines strategic objectives and the constraints around achieving those objectives, and uses an optimization algorithm to assess the optimal allocation of

resources to best achieve the objectives. Optima is typically applied in allocative efficiency studies that focus on specific disease programs or interventions areas (e.g., HIV, TB, MNH)—Optima is not designed to determine allocations between different diseases. It can, however, analyze geographic prioritization, different service delivery modalities, and long-term financial commitment¹⁵.

An example of how the Optima model has been applied is an allocative efficiency study in Sudan, meant to inform the prioritization of the national HIV response¹⁶. The model's input data, parameters, and constants were conceived through consultations with key stakeholders, and the National AIDS Spending Assessment was the source of the baseline expenditure data. Cost-outcomes curves were developed for the HIV programs to show the relationship between program expenditure and outcomes. The Sudanese government used the findings of the study for its national HIV strategic planning process, and Global Fund concept note. It increased allocations to ART and HIV prevention for key populations, while it de-prioritized HIV prevention targeted at the general population. The reallocations in its 2015-2017 HIV budget for the national response were projected to avert an additional 3,200 new infections and 1,100 deaths compared to initially planned allocations.

Jordan could use Optima to help determine the level at which each intervention for a specific disease-program, such as diabetes, could be offered. For example, it could model scenarios of the cost to offer certain preventative and curative services at comprehensive primary health centers only, or also at peripheral health centers. For that, the cost of offering services in each type of health facility would have to be known, and the estimated demand for such services.

Data Envelopment Analysis

Most allocative efficiency studies are focused on specific diseases or program areas. Entire health sector studies are less common, in part due to the range of data sources needed and methods required to determine allocations between diseases and program areas.

Studies that examined the health sector as a whole often applied the Data Envelopment Analysis (DEA) tool. The DEA is a linear programming model that evaluates the relative efficiency of units (such as hospitals) with multiple inputs (e.g. various cadres of health workers) and outputs (e.g. treatments for different types of cases). The model calculates the weights of the inputs and outputs that maximize the overall efficiency score. It is most commonly used to assess technical efficiency, but it can also be used to assess allocative efficiency, provided that the appropriate inputs are available. If routine data is available, DEA can be used to measure efficiency changes over time¹⁷.

A potential limitation of DEA is that the number of units should be at least three times the number of total input and output variables; otherwise, the unit's efficiency score could be overestimated. Applying appropriate cost data is a challenge in all efficiency studies, since input costs are often based on outputs (e.g., estimates of treatment cost). It is most beneficial for the efficiency assessment if costs are directly tied to individual patients (overhead costs are an exception)⁸.

A technical and allocative efficiency study of Ghana's public health centers applied the DEA model to assign efficiency scores to each of the randomly sampled health centers¹⁸. In addition, the study applied a logistic regression model to determine how economic, structural and demographic factors influence health center efficiency. Input and output data was collected from health centers through a questionnaire. Input data included number of staff, beds, and expenditures (DEA can also take capital charge as an input). Output data included number of outpatients, children immunized, and deliveries. The results showed that 78% of the health centers in the sample were technically inefficient, indicating that they were using more resources than needed. The logistic regression analysis showed that newer health centers and those that were receiving incentives were more likely to be technically efficient than older ones that did not receive incentives. Furthermore, 88% was also allocatively inefficient.

Jordan could use the DEA model to compare efficiency between hospitals and primary healthcare centers. A logistic regression analysis could be used to determine which factors influence health center efficiency and to what extent. In order to do this, input and output data would need to be gathered from at least a number of health facilities that would form a representative sample.

3.2 Conducting an allocative efficiency study

While there is strong global interest in evaluating efficiency, there is not always clarity surrounding the best methods for measurement¹⁹. Given the complexities and uniqueness of health systems, a one-size-fits-all dashboard of efficiency metrics does not exist. Additionally, gaps in existing data makes measuring inputs and outputs difficult. Allocative efficiency analyses are particularly challenging due to the need to gather data on population demands.

Input variables

Short-term allocative efficiency analyses would use a fixed input mix, such as the current health workforce available, while longer-term analyses can assume that the input mix can vary over time, and use the more generalized 'total cost' as input. The level of disaggregation of the input data would depend on the granularity of the required output, for instance whether the labor input by skill type would be sufficient or should be available across teams and departments as well.

Measuring outcome

The output measured should ideally be focused on health gains produced, and so sufficient baseline data would be required to show the intervention's effect. In most cases, it is very challenging to get data on a counterfactual. Patient-reported outcomes measures could help with this, such as the EuroQol five dimensions (EQ-5D) questionnaire and Short Form-36 (SF-36), which are designed to capture baseline and post-intervention data⁸.

Although output should be linked to the quality of the overall services provided, in practice studies are often constrained to measuring the number of services provided, such as patients treated. However, this does help to eliminate the difficulty of external factors influencing the outcomes. For example, mortality after a surgery is influenced by various factors out of the surgeon's control⁸.

Finally, outputs should be selected and analyzed based on their collective impact on the health system. This should be done to avoid adjustments of outputs (or corresponding inputs) that unintentionally weaken other inter-dependent outputs or outcomes⁸.

External factors of influence

In the selection of outcomes, external or environmental determinants of health system performance should be considered. These contextual factors include, among others, demographics, geography, severity of disease burdens, organization of primary care, and socio-cultural attitudes that affect users' perceptions of care. The analysis' objectives should dictate how the study should adjust for these exogenous factors to reflect constraints.

Allocative efficiency indicators

When an optimal allocation has been quantified and has been compared to status quo, allocative efficiency indicators can help to reflect the extent to which a misallocation of resources has resulted in poor health system performance. An example of a misallocation indicator is the rate of avoidable hospital admissions—that indicator can also suggest whether re-directing allocations towards primary care can improve efficiency⁸.

Determining population demand

An analysis of users' needs and demands can inform the allocation and optimal use of resources. While this concept is easy to grasp in principle, an analysis challenge is centered around the availability of data on people's needs, demands, and behaviors—and even how to define and measure 'needs' and 'demands'. While needs can be modeled with epidemiological data, actual user data is often used as a proxy for demand. Intensive qualitative and quantitative data is needed on how those needs, demands, and behaviors influence how clients engage with interventions and to what extent health outcomes are maximized because of the way interventions are mixed and distributed. This information can be difficult to capture, and many studies instead rely on client questionnaires or general population-based surveys¹⁰²⁰.

With accurate efficiency metrics, analysts will be better positioned to engage with decision-makers for improved management and governance of the health system. Clearly defined inputs, outputs, and outcomes that consider quality, client demands and needs, external influences on health outcomes, and the interdependence of a range of inputs and outputs on outcomes, can inform the design of a framework to evaluate allocative efficiency and the selection of tools most appropriate for this.

4. ANALYZING ALLOCATIVE EFFICIENCY IN JORDAN

4.1 Data availability

Availability of high-quality data with a sufficient level of granularity is missing in Jordan. Staffing data is available by health directorate or by governorate, but not by health facility. The cost per treatment used for health insurance reimbursements are set at amounts that are not based on actual costs. Expenditure data on operational costs of primary health facilities is aggregated at the central level, so that no cost comparisons can be made between facilities, interventions, disease areas, etc.

Because costing data of particular interventions, and health clinic activities are missing, costing studies are mostly forced to resort to top-down methodologies that rely heavily on strong assumptions and proxy data. A good example is a recently conducted study on the cost of expanding insurance coverage to Syrian refugees estimated the average cost of an average hospital admission, hospital ambulatory visit, and health center visit²¹. By applying the number of patients in each category in a given year to the total cost of each area, such studies ignore a tremendous amount of variety in cost of services (the difference between a check-up by a hospital's physician and a session of chemotherapy), and between each of the hospitals and health facilities.

Rough estimates from such costing studies are ineffective in determining allocative efficiency, as it is exactly the differences in cost-effectiveness between the various interventions and the various inputs mixes used that would determine the most efficient allocation of Jordan's resources for health. The lack of availability of the data required to perform an allocative efficiency study reflects the lack of focus on measuring performance and efficiency in the public health sector.

Despite the lack of data that would be required to perform a full-blown analysis of allocative efficiency, the data that are currently available can offer some preliminary indications that various allocative inefficiencies are present in the Jordanian health sector.

4.2 Symptoms of inefficiency

[Better health outcomes expected given the level of health spending](#)

In terms of its GNI per capita for 2016, Jordan's GNI per capita for 2016 was estimated at US\$3,920, which is currently just below the threshold of the upper middle income category (US\$3,956)²².

Jordan's health spending as a share of GDP in 2014 was relatively high (figure 2) compared to countries in the region in a similar development phase, while for instance under-5 mortality in the same year was close to the average (figure 3). Additionally, data from the Jordan Population and Family Health Survey 2012²⁶ shows great variation between governorates, ranging from 16 under-5 deaths per 1000 live births in Ajloun to 30 in Madaba. This suggests that potential health gains could be achieved if resources on health were spent more efficiently.

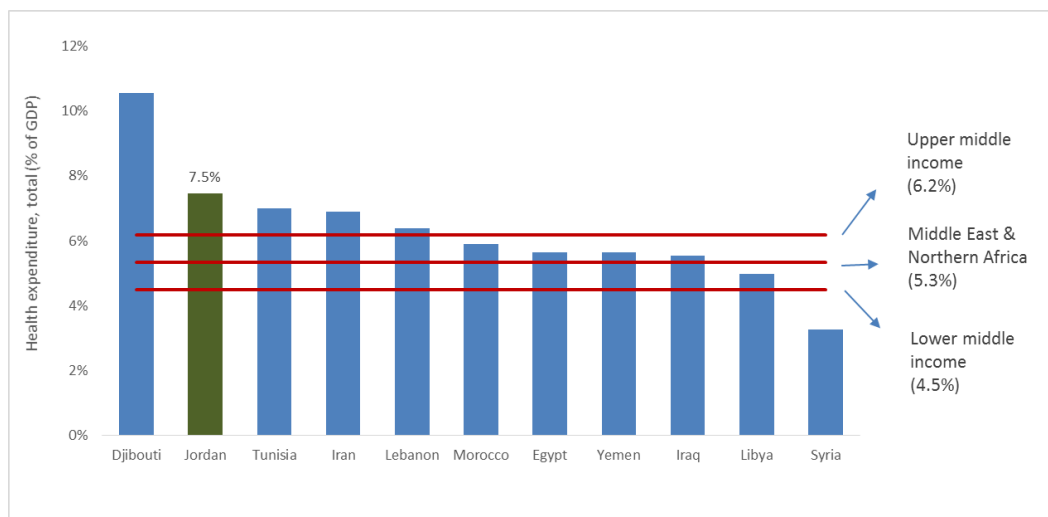


Figure 2 – Total health expenditure as a share of GDP²³

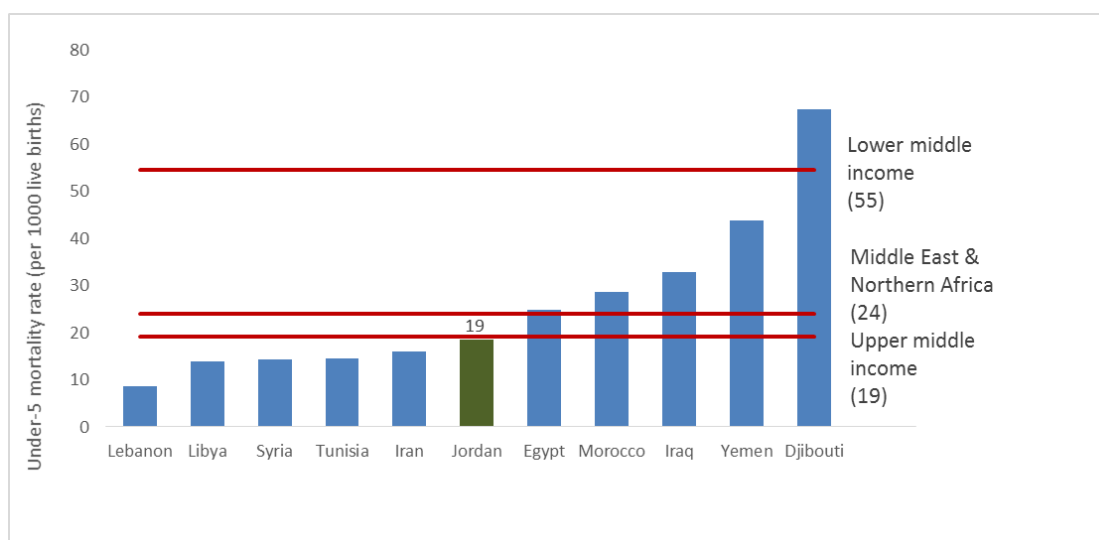


Figure 3 – Under-5 mortality rate (per 1000 live births) in 2014²⁴

Barriers to accessing health services

Out-of-pocket expenditures as a share of total health expenditure has been declining in recent years, but direct spending by households is increasing in absolute terms between 2008 and 2013²⁵. Although healthcare services are for free for the poor, either through free health insurance or by an exemption through the Royal Medical Court, 40.1% of women of the lowest wealth quintile reported having big problems getting money in order to be able to access healthcare²⁶. A third also reported issues in accessing healthcare due to the distance to the health facility. Research shows that utilization of health services are higher amongst the richest quintiles²⁵. As public insurance packages offer the usage of private clinics at low co-payments for the patients, and with disproportionately low insurance premiums, the wealthiest are most likely cross-subsidized by the poor, instead of vice versa.

Density of health workers compared to treatments varies greatly

Jordan has historically performed well compared to other countries in the region when looking at the density of nurses and physicians per population. In 2014, it outperformed both Lebanon and Egypt²⁷. However, due to the influx of Syrian refugees in the country, the number of physicians has dropped sharply from 2.94 per 1000 inhabitants in 2014 to 1.41 in 2016. Similarly, the number of nurses per

1000 inhabitants has dropped from 4.53 in 2014 to 2.64 in 2016. Moreover, although the overall number of physicians and specialists is high, the availability of general practitioners available at Ministry of Health primary healthcare centers differs greatly per governorate²⁸. Their density does not seem to be linked to the number treatments offered, and so therefore hints at possible inefficiencies (figure 4).

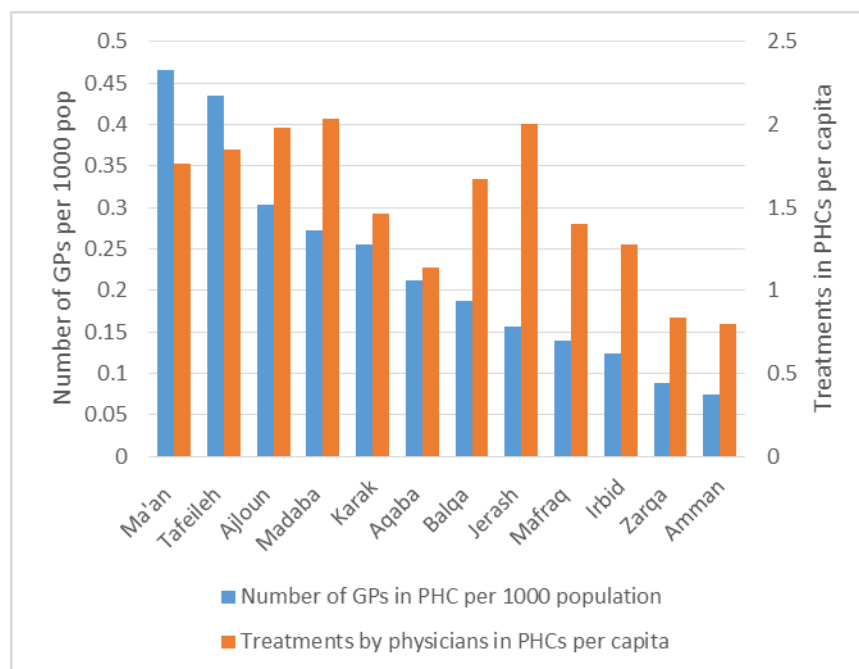


Figure 4 – General practitioners and treatments in primary healthcare facilities in 2016/33

However, it is important to note the limitations of such density measures, as they do not speak to differences in quality of the staff in place. For example, options for continued education are limited in Jordan, especially for those working in primary healthcare facilities. A recent motivation and retention survey²⁹ showed that health workers in primary healthcare clinics were more dissatisfied with opportunities for continuous education compared to their counterparts. This not only makes it challenging to ensure the level of quality of health workers over time, but might also make primary care facilities a less attractive work environment.

4.3 Primary case vs. curative care

Figures from the NHA 2013³⁰ indicate that overall spending on primary care facilities is relatively low (16%) compared to curative care (74%). For 2017, MOH has budgeted 18% of its funding for primary health care, 44% for hospital-based care³¹, with the rest of its budget going towards drugs, administrative costs, etc. Based on a review of past and planned expenditures, hospital-based care has been allocated an increasing share of the MOH budget (figure 5).

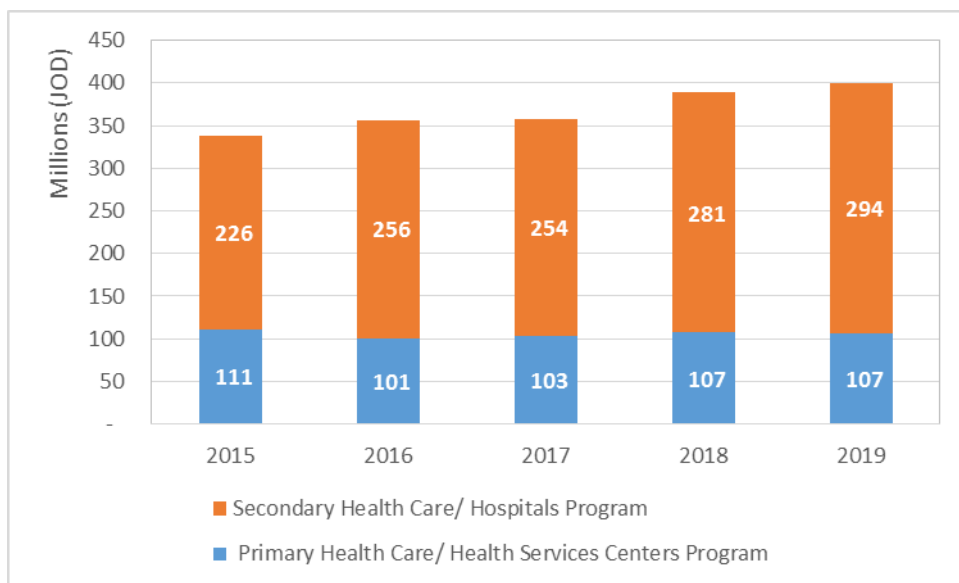


Figure 5 – MOH actual (2015), re-estimated (2016), estimated (2017), and indicative (2018, 2019) expenditure for primary and secondary healthcare³¹

The number of visits to primary healthcare clinics has increased by 8% from 2011 to 2016, while the number of staff has increased by 3%. There are large differences between governorates, with for example Zarqa having experienced a 24% increase in the number of visits to its primary healthcare clinics, while the number of staff has increased by only 1% (see figure 6). These numbers do not show differences between the types of cases treated, and the time required of each cadre of health worker to treat these. Nevertheless, such large discrepancies are an indication that staff are not deployed across governorates in a strategic manner, and most likely not based on the workload at each primary healthcare clinic.

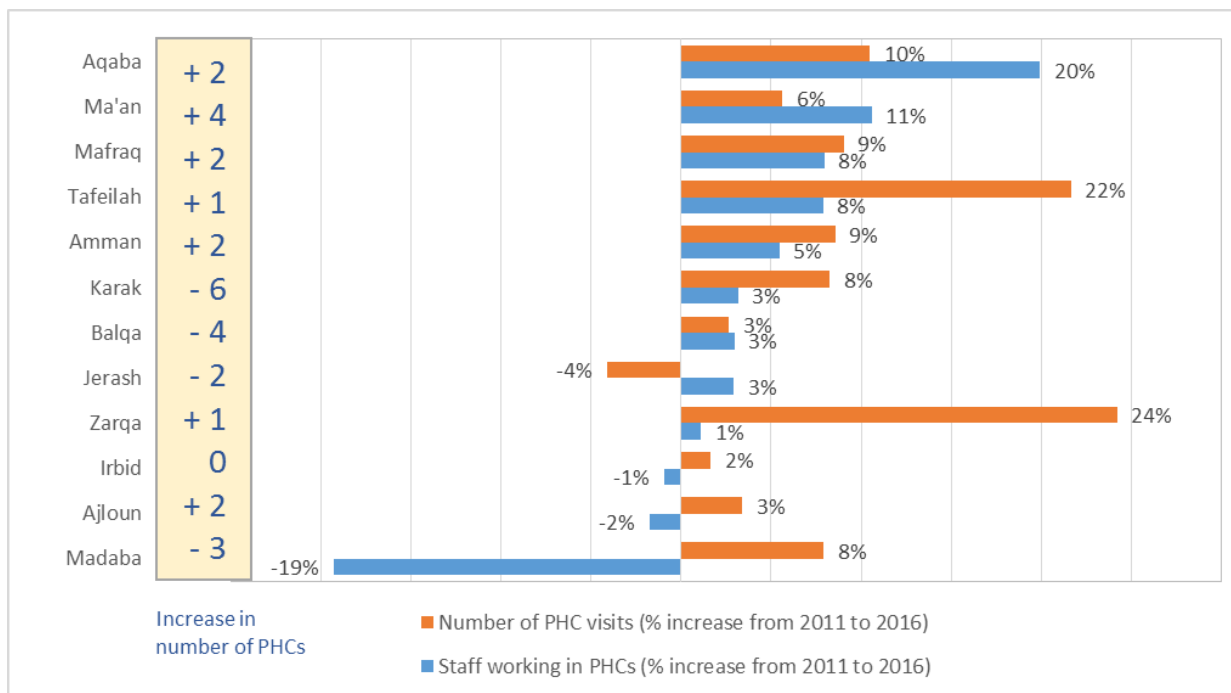


Figure 6 – Evolution of staffing and visits at primary healthcare centers from 2011³² to 2016³³²⁸ by governorate

However, as hospitals often also perform primary care services, these numbers are likely to be overestimating expenditure on curative care. For example, 89% of all visits at Prince Hamza hospital in 2016 were on an outpatient basis, which is high and likely includes many cases in which a person could have been helped at a primary care clinic instead. Figure 7 shows the overall number of visits to hospitals (inpatient and outpatient) and primary care facilities in 2011 and 2016, which does not seem to show a clear trend towards increasing hospital-based care.

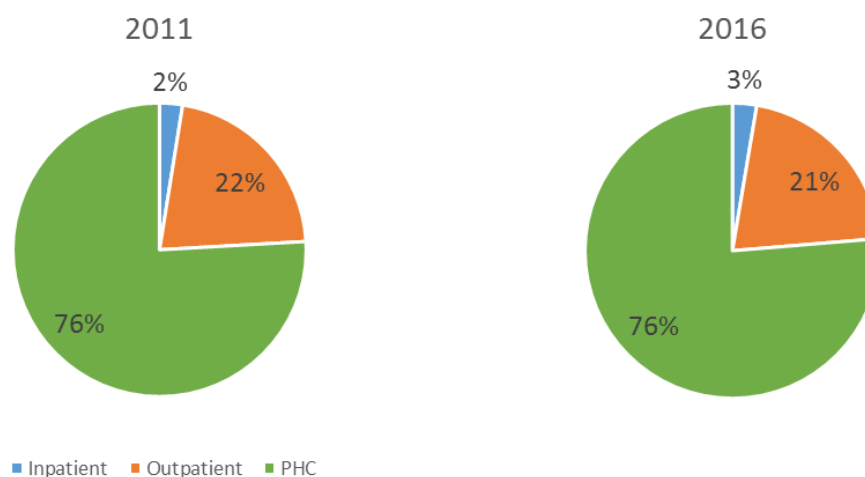


Figure 7 – Number of visits to MOH primary health care facilities and hospitals in 2011³² and 2016³³

In that case, the issue is not that people have a low demand for primary care services, but that these services are sought at hospitals (and their in-house primary care clinics) instead of primary health clinics. A number of factors influence the preference to visit hospitals directly rather than a primary health clinic first.

Low trust in primary care facilities

Because of 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. Part of the problem is that in many primary care facilities, recently graduated doctors with little practical experience are providing the consultations, rather than trained general practitioners.

Accreditation is one of the possible steps in ensuring sufficient quality of the primary healthcare clinics. The process of accreditation is fairly new, and the roll-out commenced in hospitals. One study has looked at whether accreditation has increased the quality of hospitals in Jordan. In the five hospitals assessed, it found a statistically significant improvement in terms of a reduction in return to intensive care unit within 24 hours of discharge, a reduction in staff turnover, and improved completeness of medical records³⁴. This implies that the quality of primary care facilities could improve with accreditation. Due to the lack of capacity in conducting the assessments, and the time it takes to familiarize facilities with the requirements, only 15% of all Ministry of Health primary health care facilities have thus far been accredited (98 out of 676), according to data from the Ministry of Health's Quality Directorate.

High referral rates

Referral data is collected using a manual system, and so the quality of the data is weak. There is no central database that tracks the number of referrals nor the reason for the referral. Nevertheless, the number of patients referred to a hospital after a visit to a primary care clinic is estimated to be very high (around 60%). For example, Saudi Arabian studies found a much lower rate of between 1.6% and

6.6%³⁵. If patients have such a high chance of being referred, they would likely want to reduce time by visiting a hospital directly.

Bypass fine is ineffective

Officially, a bypass fine should prevent patients from seeking care in hospitals directly. However, the fine is relatively low, and depending on various circumstances, the penalty is likely to be waived. Therefore, the mechanism is not effective in deterring healthcare seekers from making hospitals their first stop. Additionally, some insurance packages offer the possibility of visiting a hospital directly as one of their perks, further signaling that hospitals offer better quality care.

Low provider effort

A recent World Bank analysis of primary healthcare sector data³⁶ showed that provider effort was low in multiple areas. Provider effort was measured as absenteeism, the clinical effort exerted during a patient encounter, time spent with patients, and the provision of rights-based care. During the study, 17% of health providers were reported absent (both excused and unexcused). Although this is above what other studies have found in similarly developed countries, the average represents substantial variation across facilities. Although some clinics were operating fully staffed, others were missing more than half of their providers, suggesting a lack of access to care. On average, only half of the key exam elements were performed, suggesting that diagnoses and other health-related decisions are made with limited clinical information. Furthermore, clinical encounters at the primary care facilities under study lasted 10 minutes on average, but were sometimes as short as 4 minutes.

Investing in improved primary care facilities

In order to improve the quality of primary care clinics, the Ministry of Health must invest in the improvement of the quality of services provided at primary healthcare clinics. However, simply reallocating funds from hospitals to primary care facilities will not be sufficient. Similar to other middle income countries, Jordan is experiencing an epidemiological shift with an increased burden from non-communicable diseases (NCDs). In 2014, NCDs were estimated to account for 76% of all deaths, with cardiovascular disease (35%), cancers (15%), and diabetes (7%) as the main causes³⁷. Given the expected continuation of an increase in non-communicable diseases³⁸, demand for hospital services is not likely to decrease but increase over the coming years, and investments in improving primary care facilities will have to come in addition. Besides additional investments, reforms will be required to ensure sustained quality. Due to the cultural perception that services offered at primary care clinics are of lower quality, behavior change communication will be required as well. And finally, to preserve primary care's gatekeeper function, hospital attendance without a referral should be better restricted. Some hospitals are already undertaking initiatives to triage urgent from non-urgent cases at the emergency department, for instance by having separate entrances for patients that are able to walk in independently. This could be taken one step further by redirecting patients to primary care facilities nearby, if analysis would demonstrate that services can be offered at lower cost there.

5. CONCLUSIONS & RECOMMENDATIONS

A quantitative analysis of allocative efficiency in the Jordanian health sector is currently not possible due to the lack of sufficient data. Annex 2 outlines that data sources currently available, and their limitations. In the future, Hakeem could offer improved routine data collection. However, given the qualitative and quantitative information available at present, it is already apparent that allocative efficiency can be improved in multiple facets of the health system. The following is a set of practical recommendations following from the evidence presented in this report. The list is not exhaustive, and does not address all the possible reforms that Jordan could consider.

5.1 Improved planning & budgeting

Cost-effectiveness data should inform the supply of services

Which health services are offered to the population, where, and at what level, will need to be based on epidemiological data, and cost effectiveness analyses. That way supply will better match the population's needs, which will improve overall health outcomes given the available resources. Related to that, health insurance packages will need to consider which services to offer and at what copayment, in order to incentivize cost-efficient behavior.

Improving strategic planning

Resource allocation across health facilities should be based on a strategic plan. Additionally, a Human Resource Strategy will need to be developed so that staff of the various cadres are deployed where they are most needed.

Increased accountability

As part of the decentralization process, Ministry of Health should provide governorates and ultimately health facilities with more autonomy over their health expenditures. This is currently underway through hospital autonomy initiatives, but must be expanded further. All public health facilities and hospitals should be developing budgets, so that they have greater control and oversight over their expenditures and costs.

Linking budgets to results

Budgets of health facilities, hospitals, and Ministry of Health directorates should be linked to performance, to improve accountability, the efficient use of resources, and the quality of the services that are provided.

Reforming staff incentives

Currently, health workers receive a salary which is topped up with a bonus that depends on a person's qualifications (degree, specialization) and the number of years at that level. Such bonus payments should instead depend on an employee's performance in its position. One could think of common pay-for-performance approaches, such as linking it to indicators such as the number of patients treated, whereby the standard should vary depending on the setting (rural/urban).

Improving health management information systems

In order to facilitate the monitoring of expenditures and performance, and to increase accountability of providers, data systems will need to be improved and expanded so that data flows are automated from primary health facilities all the way up to the Ministry of Health. Eventually, HAKEEM could offer this opportunity. To collect such data in the short term, a data collection exercise would be required to assess the cost of delivering primary healthcare services. The intention would be to integrate a

financial component into the upcoming DHS, which could provide more insight into household expenditure on health.

5.2 Increasing demand for primary health facilities

Improving access

Restricted opening hours are often mentioned as a reason for visiting hospitals directly for primary care services. Opening hours should be accommodative, and absenteeism of all staff should be tracked. The latest quality survey showed an improvement from 63% to 80% of patients satisfied with the opening hours of the assessed health facilities.

Extending coverage to the uninsured

It is unclear what the precise percentage of the population that currently has health insurance. Estimates range from 70% to 93% of the population. Currently, the uninsured can request for an exemption of having to pay for doctor's fees from the Royal Medical Court. However, this is a time-intensive and uncertain process, and people are unlikely to seek care unless in dire need. Therefore, covering the uninsured would remove barriers to access.

Ensuring high-quality staff is present

Staff should be sufficiently qualified to perform most primary healthcare services, to reduce the number of referrals. Continued education is key in preserving the quality of the health workforce. Qualified general practitioners will need to be present during the full scope of the opening hours to enhance the population's trust in primary health facilities.

Accreditation & quality assessments

At the moment, only 98 out of 676 Ministry of Health primary health facilities are accredited. In order to ensure the population of certain quality standards, accreditation for all primary health facilities will need to be made mandatory. Additionally, Jordan uses patient satisfaction surveys to judge quality of care. The independence of the results of quality assessments should be ensured, and the outcomes should have consequences beyond the current improvement plans.

ANNEX I: THE TEN LEADING CAUSES OF INEFFICIENCY

Source of inefficiency	Common reasons for inefficiency	Ways to address inefficiency
1. Medicines: underuse of generics and higher than necessary prices for medicines	Inadequate controls on supply-chain agents, prescribers and dispensers; lower perceived efficacy/safety of generic medicines; historical prescribing patterns and inefficient procurement/distribution systems; taxes and duties on medicines; excessive mark-ups.	Improve prescribing guidance, information, training and practice. Require, permit or offer incentives for generic substitution. Develop active purchasing based on assessment of costs and benefits of alternatives. Ensure transparency in purchasing and tenders. Remove taxes and duties. Control excessive mark-ups. Monitor and publicize medicine prices.
2. Medicines: use of substandard and counterfeit medicines	Inadequate pharmaceutical regulatory structures/mechanisms; weak procurement systems.	Strengthen enforcement of quality standards in the manufacture of medicines; carry out product testing; enhance procurement systems with pre-qualification of suppliers.
3. Medicines: inappropriate and ineffective use	Inappropriate prescriber incentives and unethical promotion practices; consumer demand/expectations; limited knowledge about therapeutic effects; inadequate regulatory frameworks.	Separate prescribing and dispensing functions; regulate promotional activities; improve prescribing guidance, information, training and practice; disseminate public information.
4. Health-care products and services: overuse or supply of equipment, investigations and procedures	Supplier-induced demand; fee-for-service payment mechanisms; fear of litigation (defensive medicine).	Reform incentive and payment structures (e.g. capitation or diagnosis-related group); develop and implement clinical guidelines.
5. Health workers: inappropriate or costly staff mix, unmotivated workers	Conformity with pre-determined human resource policies and procedures; resistance by medical profession; fixed/inflexible contracts; inadequate salaries; recruitment based on favouritism.	Undertake needs-based assessment and training; revise remuneration policies; introduce flexible contracts and/or performance-related pay; implement task-shifting and other ways of matching skills to needs.
6. Health-care services: inappropriate hospital admissions and length of stay	Lack of alternative care arrangements; insufficient incentives to discharge; limited knowledge of best practice.	Provide alternative care (e.g. day care); alter incentives to hospital providers; raise knowledge about efficient admission practice.
7. Health-care services: inappropriate hospital size (low use of infrastructure)	Inappropriate level of managerial resources for coordination and control; too many hospitals and inpatient beds in some areas, not enough in others. Often this reflects a lack of planning for health service infrastructure development.	Incorporate inputs and output estimation into hospital planning; match managerial capacity to size; reduce excess capacity to raise occupancy rate to 80–90% (while controlling length of stay).
8. Health-care services: medical errors and suboptimal quality of care	Insufficient knowledge or application of clinical-care standards and protocols; lack of guidelines; inadequate supervision.	Improve hygiene standards in hospitals; provide more continuity of care; undertake more clinical audits; monitor hospital performance.
9. Health system leakages: waste, corruption and fraud	Unclear resource allocation guidance; lack of transparency; poor accountability and governance mechanisms; low salaries.	Improve regulation/governance, including strong sanction mechanisms; assess transparency/vulnerability to corruption; undertake public spending tracking surveys; promote codes of conduct.
10. Health interventions: inefficient mix/inappropriate level of strategies	Funding high-cost, low-effect interventions when low-cost, high-impact options are unfunded. Inappropriate balance between levels of care, and/or between prevention, promotion and treatment.	Regular evaluation and incorporation into policy of evidence on the costs and impact of interventions, technologies, medicines, and policy options.

The World Health Report (2010)

ANNEX 2: MAIN DATA SOURCES

Source	Scope	Data	Limitations
MOH information & Research Directorate	All MOH hospitals and health facilities	Number of cases by disease, number of inpatients and outpatients by hospital, number of PHCs and hospitals by governorate, PHC patients by governorate, PHC diagnoses by disease, number of staff by cadre and governorate.	No referral data, data aggregated by disease area but not by type of intervention, breakdown of staff placements and treatments per facility is missing, data made available in PDF only.
MOH budgeting data	Central MOH, Civil Health Insurance Fund, High Health Council, and the Prince Hamza Hospital	Financial expenditure and budgets by directorate, programs (e.g. PHC), activity (e.g. providing primary care services), sub-item (e.g. rent, allowances)	No data by health facility, only Prince Hamza has a separate budget
National Health Accounts, High Health Council	Public and private sector, semi-annual	Expenditure from public and private sector (incl. out-of-pocket expenditures), breakdown by financing agent and source type, by function (curative, primary, administration, training, other), and by salaries, drugs, etc.	No specifics on disease areas or health facilities, financial reporting differs per institution, directorate and per hospital, struggles with cash vs. accrual accounting which makes trend analysis difficult
MOH quality assessments	Selected PHCs, hospitals, and an internal MOH survey	Patients are asked whether they are satisfied or not with the ease of access to building, friendliness of staff, opening hours, the waiting time, duration of service/treatment	No quantification of the waiting time, duration of service/treatment.
Electronic Health Records	Implemented in 97 health centers and 16 hospitals	Meant to track medical records of patients enrolled in the Hakeem program	Only selected elements of the program have been implemented so far, and the quality of the data is very weak, no financial data but could be included in the future.
Population and Family Health Survey 2012	Nationally representative survey of 15,190 households and 11,352 ever-married women age 15-49	Household questionnaire on household characteristics and composition, and a women's questionnaire on maternal health, immunization, STIs, family planning, child health, cancer screening, nutrition, and problems in accessing healthcare.	RMNCH focused, and not repeated regularly. Lacks data on utilization of health services in other disease areas and by other population groups. Plan is to include a more comprehensive financial section in the 2016/2017 version.
Household Expenditure and Income Survey 2013	Survey covering a national sample of households	Expenditure on medicines, glasses, medical appliances (e.g. hearing aid), government hospital and medical centers, private hospitals/doctors dentist, x-ray, laboratory services, treatment outside of the country.	Captures out-of-pocket expenditure but not utilization of medical services by the insured that do not pay directly, no breakdown by intervention.

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