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An Overview Assessment of Healthcare in the State of Kuwait: Confronting Efficiency, Cost-Effectiveness, and Key Challenges Facing the Public Health System

AlJawhara M. K. AlSabah[1*]
[1]New York Medical College School of Health Sciences and Practice & Institute of Public Health, Valhalla, NY 10595
*Corresponding Author: aljawhara_alsabah@alumni.nymc.edu
ORCID 0009-0000-8851-0993

Abstract Amid dwindling resources and growing demands, global pursuits for cost-effectiveness in delivering quality care and interventions are intensifying as recent efforts shift towards optimizing essential medical supply chains. Yet, a viable balance of equity and efficiency in the allocation of health resources – without compromising one over the other – remain among the major implementation challenges in global public health systems. Public health system reforms must commit to achieving cost-effective, efficient, and equitable healthcare for all, prioritizing the Sustainable Development Goal 3 (SDG 3) targets and indicators for Universal Health Coverage (UHC) when opting for allocation efficiency. In the case of Kuwait's public health system, the country is challenged by several enduring problems, despite the government's significant investments in the healthcare industry during the previous few decades. Insufficient resources, volatile international oil prices, shifting disease trends, inadequate resource and capacity planning management in public hospitals, absence of national health information systems, and scarcity of medical personnel in the country. Given the scarcity of scientific studies on the efficiency of the public health sector (MoH) in relation to the private health sector (for-profit), or the performance of government hospitals just prior to the onset of the COVID-19 pandemic, further research is particularly relevant to identifying efficiency determinants and eliminating internal/external factors of inefficiencies; thus informing policymakers to work towards better healthcare resource allocation in order to achieve health system efficiency and self-reliant healthcare service delivery that can prove resilient in times of unpredictable global emergencies. Further econometric evaluations are needed to assess healthcare efficiency in public hospitals and identify factors of hospital inefficiency resulting from internal factors, such as resource allocation and utilization within public hospitals and external factors within their surrounding vicinities. Lastly, future studies must consider comparing the relative efficiency of public and private health sectors in the State of Kuwait to assess whether ownership type (government-owned hospitals vs. privately-owned hospitals) affect efficiency levels of facilities delivering healthcare services.

Keywords *Cost-effectiveness, health economics, health policy, health services research, Kuwait***, e***fficiency, health system reform, public health, government hospitals*

1 INTRODUCTION

As a welfare state with elaborate subsidies exclusively for its own citizens, the Kuwaiti government essentially provides citizens with extensive social welfare programs therefore becoming an allocation or distributive state. The budget, in effect, is little more than an expenditure program. National health accounts and time-series data reveal Kuwait's unsustainable health expenditure (as a percent of general government expenditure) drastically increasing between 2010-2019, while government health spending as a share of gross domestic product (GDP) further growing over the same 2010-2019 fiscal periods (Table 1 & Table 2) (World Bank, 2019). Despite most government expenditures going towards healthcare and the Ministry of Health's (MoH) annual budget, life expectancy of Kuwaitis and other population health indicators are not any better compared to similar countries in the region that spend considerably less on healthcare, indicating possible inefficiency in the utilization of scarce resources (World Bank, 2019).

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TABLE 1 *GENERAL HEALTH EXPENDITURES AND GOVERNMENT SPENDING, FY 2009/2010 – FY 2018/2019 IN MILLION CURRENT US$*

TIME	Current Health Expenditures (CHE)	Domestic General Government Health Expenditure (GGHE-D)	Domestic Private Health Expenditure (PVT-D)	General Government Expenditure
Units	Million current US$	Million current US$	Million current US$	Million current US$
2010	3091.7643	2603.2898	488.4745	51638.7307
2011	3593.8248	3035.8112	558.0136	60164.0089
2012	4060.7201	3389.1370	671.5831	67554.8306
2013	4333.0949	3638.4287	694.6662	66437.5914
2014	4742.8876	4011.9529	730.9347	72025.1793
2015	4829.7165	4098.4600	731.2565	62339.6159
2016	5176.0127	4415.9778	760.0349	58814.2952
2017	5615.9859	4813.4188	802.5671	62014.2241
2018	7173.3092	6326.7425	846.5667	69470.2714
2019	7398.8880	6434.1573	964.7307	72029.6316

Note. State of Kuwait National Health Accounts (NHA) 2010-2019 time series. WHO Global Health Expenditure Database – NHA Indicators. Available at: http://apps.who.int/nha/database/ViewData/Indicators/en

TABLE 2 *GENERAL HEALTH EXPENDITURES AND GOVERNMENT SPENDING, FY 2009/2010 – FY 2018/2019 IN PERCENTAGE*

TIME	Current Health Expenditures (CHE) as % Gross Domestic Product (GDP)	Domestic General Government Health Expenditure (GGHE-D) as % Current Health Expenditure (CHE)	Domestic Private Health Expenditure (PVT-D) as % Current Health Expenditure (CHE)	Domestic General Government Health Expenditure (GGHE-D) as % General Government Expenditure (GGE)	Domestic General Government Health Expenditure (GGHE-D) as % Gross Domestic Product (GDP)
Units	%	%	%	%	%
2010	2.68	84.20	15.80	5.04	2.26
2011	2.33	84.47	15.53	5.05	1.97
2012	2.33	83.46	16.54	5.02	1.95
2013	2.49	83.97	16.03	5.48	2.09
2014	2.92	84.59	15.41	5.57	2.47
2015	4.21	84.86	15.14	6.57	3.58
2016	4.73	85.32	14.68	7.51	4.04
2017	4.65	85.71	14.29	7.76	3.99
2018	5.10	88.20	11.80	9.11	4.50
2019	5.50	86.96	13.04	8.93	4.78

Note. State of Kuwait National Health Accounts (NHA) 2010-2019 time series. WHO Global Health Expenditure Database – NHA Indicators. Available at: http://apps.who.int/nha/database/ViewData/Indicators/en

2 HEALTH REFORM POLICIES:

3 KUWAIT NATIONAL DEVELOPMENT PLAN

In early 2017, the Government of Kuwait unveiled its vision and plan of transforming the country into a regional financial, cultural, and institutional leader by the year 2035 through 164 strategic development programs; all in the hope of diversifying the Kuwaiti economy and reducing its reliance on oil revenues (Olver-Ellis, 2020). According to Kuwait Vision 2035, launched as 'New Kuwait' national development plan, high-quality medical care is one of the seven pillars included in the development agenda to improve the quality of services at a lower cost and develop national cadres in the healthcare system (Kuwait Ministry of Foreign Affairs, 2021).

The overarching theme of health in the 'New Kuwait' development plan is essentially met with better, modernized treatments for high-quality healthcare; in which the majority of its development goals are aimed at expanding the clinical capacity of hospitals by improving the average physician-to-patient ratio and increasing the number of hospital beds per 1,000 people through several new construction projects in the country (Kuwait Ministry of Foreign Affairs, 2021). Nevertheless, in order to provide high-quality routine health services, public hospitals within the health system need to be further strengthened to deliver effective and efficient medical services.

4 ENHANCING HOSPITAL PERFORMANCE & PRODUCTIVITY IN KUWAIT'S PUBLIC HEALTH SECTOR

Kuwait's national health system encompasses six autonomous, decentralized administrative divisions known as health areas or regions: (i) Capital (Asima); (ii) Hawalli; (iii) Ahmadi; (iv) Jahra; (v) Farwaniya; and (vi) Sabah (MOH, 2021). Many primary healthcare centers and a secondary general hospital serve each of these health areas. Kuwait has a three-tiered healthcare delivery system, including primary health centers (PHC or clinics), secondary (general hospitals) and tertiary (specialist hospitals) facilities that are either linked with the Ministry of Health (MoH), other governmental divisions, or the private sector (Al-Homayan et al., 2013; Albejaidi, 2010). Treatment of chronic conditions (such as hypertension and diabetes), dental care, prescriptions and medications are all provided by PHCs. Hospitals in Kuwait provide secondary healthcare, such as surgical operations, specialized medical interventions for clinical illnesses, rehabilitation services, emergency medicine, and critical care services for those in need of medical attention. Patients who require more extensive medical attention and care are frequently sent to specialty hospitals (Al-Homayan et al., 2013; Almalki et al., 2011).

For years, patients from Gulf Cooperation Council (GCC) nations have traveled abroad to pursue medical treatment (medical tourism). Historically, GCC countries have lacked expertise in specific specialized fields; therefore, governments have opted to finance their sick citizens' travels abroad, where quality healthcare services are available for the most complex medical cases. While the exact number of outbound patients is often not disclosed, it was estimated that around 650 Kuwaiti patients were sent abroad for medical treatment each month between 2017 and 2018, prompting outrage over the reckless spending of public funds and causing the Minister of Health to resign. This essentially awakened people to the surge in medical expenditures, which are borne by the Kuwaiti government amidst dwindling oil prices. By the time COVID-19 paralyzed the world in 2020, the number of outbound medical tourists from Kuwait had already declined. This is the byproduct of the governments' national development plan ('New Kuwait' vision 2035), which aims to increase citizenry-based healthcare capacity in order to make the national health system more sustainable and therefore effectively decreasing the need for overseas treatment. Furthermore, Kuwait has been overhauling its healthcare infrastructure with state-of-the-art treatment facilities so that people can soon have access to quality healthcare services at home.

Indeed, the COVID-19 pandemic was a stark reminder for the government on why Kuwait's vision 2035 national development plan – especially investment in the health sector – is so vital and why hospitals and healthcare delivery systems that are not doing enough must do more, while the MoH must continuously strive to do even better. When the pandemic brought international travel to a halt, the risk of Kuwait's unsustainable healthcare system, which relies heavily on overseas treatments and foreign medical workers, quickly became exposed. Thus, following the pandemic, Kuwait will likely

amplify its efforts to ensure more self-reliance on its own national healthcare system. With national healthcare strategies already laid out, it will be more critical than ever that health governance, organizational structures, effective financing, and hospital productivity are well aligned to ensure access to adequate healthcare services in the face of any unexpected crisis. As is typical with public sector enterprises, particularly in high-income developing countries, the public healthcare system in Kuwait is perceived to be somewhat inefficient relative to neighboring Arab Gulf states. Therefore, instead of reductions in public expenditure on healthcare and the financing of overseas treatments for high-risk medical cases, both of which can have severe implications for the health status of the population, a more logical means of controlling the total public expenditure on healthcare would be to improve the overall efficiency of the public healthcare system.

Due to the significance of the problem, economic research whereby the efficiency of actions, productions, or organizational units are analyzed by applying frontier-based techniques, the first step to health system reform in the country should begin by following the analytical framework of non-parametric data envelopment analysis (DEA); a widely used method in operations research and econometrics for the estimation of production frontiers and empirical measurements of the productive efficiency of decision-making units (DMUs) represented by individual (hospital) units, thus identifying *efficient* hospitals as those that reach the boundary of efficiency and *inefficient* hospitals as those that fall under the frontier (Imamgholi et al., 2014).

Furthermore, it can often be asserted that the private health sector produces health services more efficiently than the governmental health sector; this is especially true in Kuwait. The commonly cited argument among Kuwaitis is based on the premise that because public MoH hospitals are government-funded and operated, they are not profit-driven and therefore do not provide the proper incentives for managers to optimize resource utilization. As a result, an estimation of the public and private sector's productivity and scale efficiency may provide important insights worthy of consideration by policymakers. In addition, estimating the magnitude of required output increases and/or input reductions can be conducted in order to make relatively inefficient health sector facilities more efficient. Subsequently, carrying out a second-stage Tobit regression analysis to estimate the effect of hospital ownership on hospital efficiency is another possible method of determining the significance of dependent variables and impact factors.

Drawing on the theoretical framework of efficiency in frontier-based evaluations such as DEA in healthcare is expected to lead us to some challenging yet fundamental follow-up questions to consider, namely: If private organizations providing public services could lower costs and increase efficiency, what would happen to their public counterparts? Would the private delivery of social services and public goods serve the public interest? If the simple transfer of ownership from public to private hands could reduce healthcare spending and enhance the quality of services, would the future of Kuwait's public health system be obsolete?

5 THE FUTURE OF KUWAIT'S HEALTH SYSTEM

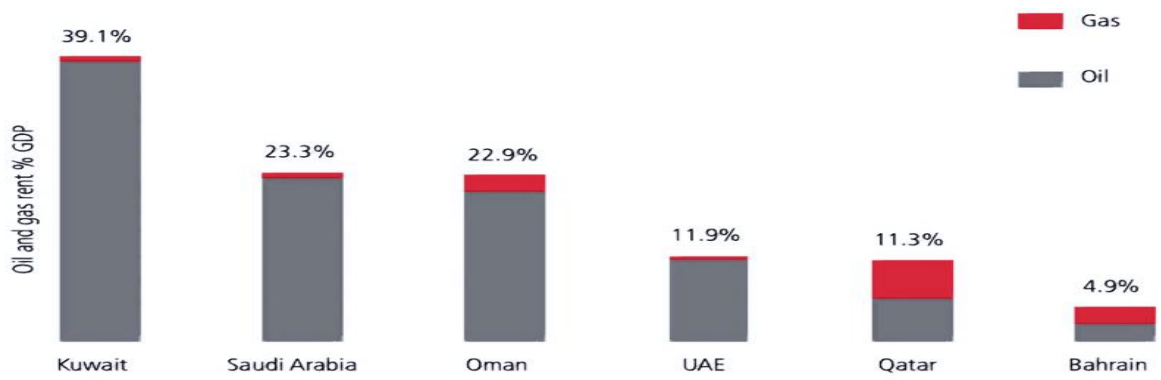
Strong healthcare systems are fundamental if we are to improve population health outcomes and accelerate progress towards SDGs of reducing communicable and non-communicable diseases. At a time when economic downturn, where a novel corona virus pandemic and climate change add to the challenges of meeting those goals, the need for robust health systems is critical.

Kuwait's current healthcare system is projected to confront several issues in the near future. With the country's reliance on oil revenues (Figure 1), the economic slowdown of global oil markets and drop in prices induced by the COVID-19 pandemic led to increased annual budget deficits, prompting the government to seek passage of a debt law that facilitates deficit spending with significantly less barriers. Such a strategy implies that the economic obstacles are mostly the result of unprecedent disease epidemics and emergencies that have temporarily lowered global oil consumption, nevertheless, in a world that realizes the environmental consequences of fossil fuels and hydrocarbons, the likelihood of unceasingly rising oil prices is not guaranteed. Kuwait may be unable to continue paying for what it wants with the assumption that there is always a future for oil in an era of heightened environmental consciousness. The burden of non-communicable diseases, including cardiovascular disease, diabetes mellitus, and mental disorders are expected to rise further and the proportion of the Kuwaiti population over 60 years old is anticipated to reach 25% of the total population by 2050; implying dramatic increase in prevalence of NCDs is still yet to come (Behbehani, 2014). Obesity rates are expected to reach exceedingly

high levels by 2030; similarly, the population frequency of diabetes nationwide is prone to increase in response (Kilpi et al., 2013).

Unfortunately, however, Kuwait's current healthcare system – availability and distribution of essential medicines, health products and supply chains, detailed coordination of complex operation structural service delivery of reliable, accessible, quality care – is likely to encounter various however easily avoidable issues in the near future if left unchecked. Instability of being dependent on the fluctuations of oil prices presents a certain degree of economic and development concerns (Figure 1). Kuwait's substantial reliance on oil proceeds for domestic government spending; meaning that early economic slowdown associated with stagnation of global markets due to the COVID-19 pandemic, along with low oil prices, has increased yearly budget deficits, prompting the government to seek passage of a debt legislation that facilitates deficit spending. This bid presupposes that the economic challenges are mostly the result of the pandemic temporarily lowering global oil consumption. However, the possibility of oil earnings continuing indefinitely is far from guaranteed in a well-informed society that recognizes the environmental consequences of hydrocarbon emissions. Kuwait may find itself unable to continue paying for what it wants with loans based on an optimistic future for petroleum production and oil exports in an era of heightened environmental consciousness. The global burden of non-communicable diseases, including cardiovascular illnesses, diabetes mellitus, and mental disorders, are projected to grow exponentially; particularly in the Middle East and North Africa (MENA) region. Kuwait's population over the age of 60 is predicted to reach 25 percent of the total population by 2050 (Behbehani, 2014); as a result, the prevalence of NCDs will grow dramatically. For example, obesity is anticipated to reach epidemic proportions by 2030 (Kilpi et al., 2013). Similarly, diabetes prevalence is anticipated to grow across the country.

FIGURE 1 OIL & GAS DEPENDENCY IN KUWAIT AND THE GCC, 2014–2016

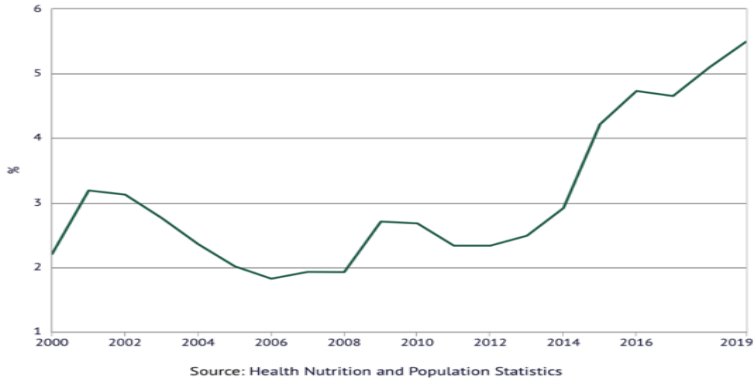


Note. Adapted from data obtained from the Kuwait Central Statistical Bureau, National Accounts (at constant prices). Borrowed from Kuwait Health System Review, London School of Economics & Political Science (LSE Health), Kuwait Foundation for the Advancement of Science (2018).

It was estimated that from 2010 to 2030, there would be a 22 percent increase in the global cost of care for cardiovascular diseases (from $863 billion to $1053 billion); while global spending on diabetes is projected to increase from $500 billion in 2010 to $745 billion by 2030 (World Economic Forum, 2011). The international cost of mental health care was estimated to be $2.5 trillion in 2010 and is expected to rise to 6$ trillion in 2030 (World Economic Forum, 2011). It was documented that the cost of common NCDs for GCC countries is expected to increase from $36 billion in 2013 to $68 billion in 2022 if governments fail to implement measures to curb the prevalence of NCDs (Alshaikh et al., 2017). As mentioned above, the prevalence of diabetes and global health spending to treat it are expected to increase. The International Diabetes Federation predicts that the health expenditure due to diabetes for individuals aged 20-79 years in the Middle East and Northern Africa (MENA) region is going to increase from $13.6 billion in 2013 to $24.7 billion in 2035 (International Diabetes Federation, 2013).

If we begin evaluating the effectiveness of the financing function or Kuwait's health financing policies, we can see that by 2019, the current health expenditure in Kuwait as percent of GDP was 5.5 percent; that corresponds to a 7.77 percent increase from the previous year in 2018 and maintains the positive percent change consistently found through the years – with the exception of the minor dip in 2017 that indicates a -1.64 percent reduction from 2016 – as notably illustrated in Figure 2 (The World Bank, 2019).

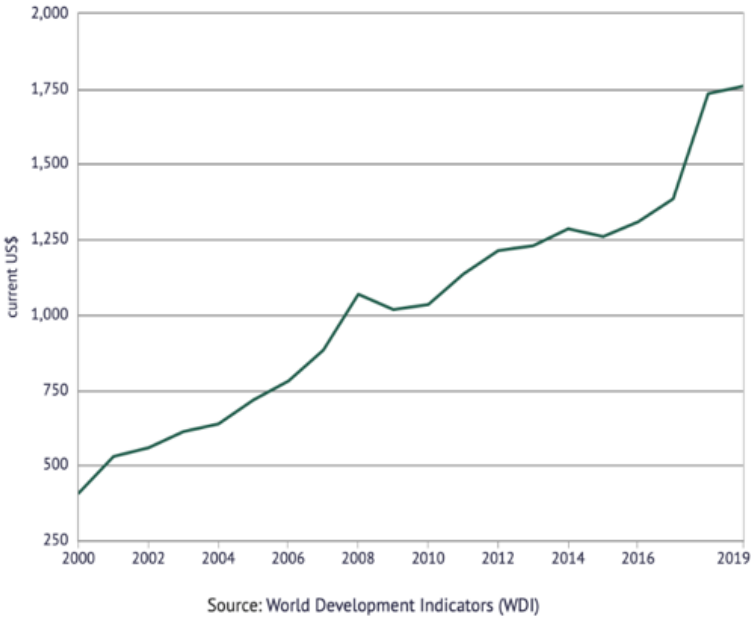
FIGURE 2 KUWAIT - CURRENT HEALTH EXPENDITURE (% OF GDP)



DATE	VALUE	CHANGE, %
2019	5.50	7.77 %
2018	5.10	9.59 %
2017	4.65	-1.64 %
2016	4.73	12.24 %
2015	4.21	44.55 %
2014	2.92	17.21 %
2013	2.49	6.63 %
2012	2.33	0.00 %
2011	2.33	-12.91 %
2010	2.68	-1.02 %

The current health expenditure per capita (current US$) that same year in the country was at $1,758.67 in 2019, a modest percent change increase of 1.43 percent from 2018; nevertheless, the overall trend of the line graph suggests consistent increase prior to 2015, but continues to climb again after 2015 with a positive percent change of almost 40 percent between 2015-2019 displayed in Figure 3 (MoH, 2020; Health Nutrition and Population Statistics [HNPS], 2019).

FIGURE 3 KUWAIT - CURRENT HEALTH EXPENDITURE PER CAPITA (CURRENT US$)



DATE	VALUE	CHANGE, %
2019	1,758.67	1.43 %
2018	1,733.81	25.22 %
2017	1,384.58	5.85 %
2016	1,308.11	3.89 %
2015	1,259.18	-2.01 %
2014	1,285.01	4.58 %
2013	1,228.77	1.34 %
2012	1,212.57	6.89 %
2011	1,134.39	9.77 %
2010	1,033.38	1.65 %

Keeping the focus on the same years between 2015-2019, inclusively; public spending on health is remarkably high in comparison to other neighboring countries in the region, yet, noticeably unremarkable increases in hospital bed capital and

nursing human resources essential to ensure an adequate ratio of beds-to-nurses or nurse per hospital bed (staffed beds) compared to the yearly increase of funds entering the system (The World Bank, 2019).

6 CONCLUSION

Despite the government and community attempts to enhance public health awareness and education, the health burden continues to rise in the State of Kuwait, hence increasing the demand for health financing. As practically all present health expenditures are paid by oil income, the state's ability to fulfill expanding demand will depend on raising oil revenues at the same rate, lowering spending in other sectors, restricting health service supply, or boosting the efficiency of health expenditures. Current research implies that oil income may be dropping, while health care expenditures are rising. In addition, the projections for oil prices in the next years do not indicate that income will be sufficient to cover the rising need for healthcare.

In relation to the growing demand for healthcare and increasing government expenditure, securing an efficient, equitable, and cost-effective healthcare system is both a national imperative and global responsibility. The United Nations (UN) have recognized the vital role of healthcare systems for the successful achievement of Universal Health Coverage (UHC) goals (Abdullatif, 2005). The State of Kuwait joins numerous other nations that also experienced substantial population growth, increased life expectancy (aging population 65+), and the proliferation of lifestyle-related diseases (non-communicable diseases; NCDs). These combined set of circumstances have increased the demand for healthcare services at a time of scant health resource (Khoja et al., 2017).

When monitoring the health financing function, performance also must be measured relative to monetary funding entering the public health system. Thus, we need to consider the resources potentially available to the system, the conditions that influence how difficult it might be to mobilize these resources, and the broader budget constraint faced by policymakers in the public health sector. In addition to more general macroeconomic data (i.e., GDP per capita), an additional indicator that tends to reveal more than just Kuwait's health financing function are public sector expenditures as a share of gross domestic product (GDP); measuring the share of national income effectively captured and utilized by the public sector; in a sense, this represents the public sector's budget constraint when allocating resources between different public demands (WHO, 2003).

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CONFLICTS OF INTEREST

The author declares no conflict of interest.

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