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Review Article

Saving the Suffering Lebanese Healthcare Sector Immediate Relief while Planning Reforms

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ABSTRACT

In October 2019, an already strained economy in Lebanon suffered a sapping shock leading to a palpable shortage of US dollars, limitations on foreign currency withdrawals and transfers, substantial devaluation of the Lebanese currency, and massive loss of purchasing power. The economic downfall had a crippling effect on all healthcare sectors including hospitals, healthcare providers, and the pharmaceutical and medical supplies industry. The outbreak of COVID-19 further aggravated the crisis. To address the health care crisis, Lebanon needs a dual tracked plan, with immediate measures to tackle the short-term urgency and a medium/long term effort to address the health sector's structural issues. In this paper, we present some essential reforms needed in the short-term. The approach focuses on maintaining access to healthcare for all, enhancing primary and urgent care centers, controlling readmission, defined as subsequent admission of a patient within a month for the same health problem, and introducing telemedicine. Immediate measures will be needed to reduce the financials strain on hospitals and as well as the hospitalization costs. In parallel, efforts are needed to support healthcare providers and address the challenges of the pharmaceutical and medical supplies industry. These efforts can include direct and indirect monetary support, along with guiding principles to support the people behind these industries while maintaining the quality of the products and services they are providing.

Key words: COVID-19; economics; Lebanon; telemedicine

INTRODUCTION

October 2019 was a turning point in Lebanon as the country suffered from an economic shock with downstream effects that shattered every sector. After banks closed for several weeks, the Lebanese public came to discover that foreign currency reserves in the banks and the central bank were depleted and that depositors suffered from arbitrary capital control measures unsanctioned by official authorities. The Lebanese market suddenly experienced a palpable shortage of US dollars leading to multiple parallel exchange rates exceeding the official rate, severe limitations on dollar withdrawals, and harsh restrictions on international transfers of foreign currency from the country.[1] The outbreak of COVID-19 in February 2020 further aggravated the economic turmoil as the whole country went into lockdown for nearly six weeks. In a country that is highly dependent on tourism and services, COVID-19 weighed heavily on an already strained economy that was suffering from high inflation and unemployment rates,[2] and high public debt.[3]

Similar to other countries, Lebanon's supply chain of goods, including medical supplies, was

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deeply impacted by the pandemic. However, while many other countries have managed to cushion the impact of COVID-19, Lebanon was incapable of doing so as it struggled with a severe financial crisis and an unprecedented economic depression. The World Bank expects a prolonged crisis, further loss of purchasing power, and spikes in poverty and unemployment rates.[4]

This paper examines the effects of multiple economic strains on the healthcare system with focus on the hospital sector, healthcare providers, and the pharmaceutical and medical supplies sector. As with other economic sectors in Lebanon, the healthcare sector is facing significant challenges that cannot be overcome unless serious reforms are implemented. Immediate and long-term plans for reform are needed. This paper focuses mainly on the immediate short-term actions/solutions needed to prevent a total collapse of the healthcare system and ensure the solvency of individuals in need of medical care and that of their families. This is of major importance in light of the uncertainty of how and if Lebanon's central bank (Banque du Liban) will continue to subsidize essential commodities including medications and medical supplies.

Overview of the Lebanese Healthcare System

Over the last two decades and in the aftermath of a devastating civil war (1975-1990), the Ministry of Public Health (MOPH) took many steps to strengthen the health system and ensure better quality and access.[5] Lebanon ranked 33rd among the 195 countries in the Healthcare Access and Quality (HAQ) index in 2018[ii].[6] It ranked first among all the Middle East countries and recorded the best performance among high-middle socio-demographic index (SDI) countries, along with Saudi Arabia and Turkey in terms of the HAQ index. Moreover, Lebanon's life expectancy at birth is 76.28 years - the third highest in the Middle East after the UAE and Qatar. It has also succeeded in significantly lowering infant mortality rate, neonatal mortality rate, and under-five mortality rate over the last 30 years.[7] Healthcare delivery for inpatient treatments is undertaken by a network of private and public hospitals. According to the MOPH website, public hospitals account for 18% of the total hospital beds in the country.[5] Private clinics are utilized the most for ambulatory services. In addition, an expanded network of primary health care centers and dispensaries run by the MOPH and charitable organizations cater to lower income segments of the population who cannot afford private ambulatory care.

While the prices of medications are subject to pricing structures set by the MOPH, many medications remain unaffordable for low-income patients. Through the primary health care centers network, the MOPH, in collaboration with the YMCA (Young Men's Christian Association) and other NGOs (Non-Governmental Organization), dispenses essential medications for chronic diseases free of charge.[5] There are 650 active dispensaries distributed across all governorates,[8] alongside 238 primary healthcare centers.[9] The MOPH has sought to enhance the quality of care provided by ensuring that these centers can offer a basic set of health services and products that are financially supported for everyone (known as the Essential Healthcare Package), and by introducing an accreditation system that sets the quality standards and prompt continuous improvement in these centers to implement.[10]

In 2017, the government, through the MOPH and military funds that cover the Lebanese army and their families, financed 21.4% of the cost of healthcare goods and services spent in the country (Known as Current Health Expenditure, [CHE]). Funds based on employer contributions (excluding the military as employer) such as "The National Social Security Fund" (NSSF) and the "Civil Servant Cooperative" covered 23% of healthcare cost. While, private insurance companies covered 19.1%, NGOs covered 3.1% and the rest are out-of-pocket (OOP) accounting for 33.1% of the healthcare expenditure.[11] Nonmilitary employer-based healthcare coverage funds are publicly managed in Lebanon and include:

- The National Social Security Fund (NSSF) which is a fund based on contributions by employers for employees of the private sector. To note home care is not covered by the NSSF. In 2018, 26% of all citizens benefited from the NSSF.[12]

- The civil servant cooperative covers civil servants. 3% of citizens benefited from the civil servant cooperative in 2018.[12]

The distribution of their contribution to the total expenditure by employment (both military and nonmilitary) funds is shown in figure 1[11] with the NSSF contribution accounting for most of the

employer-paid health expenditure.

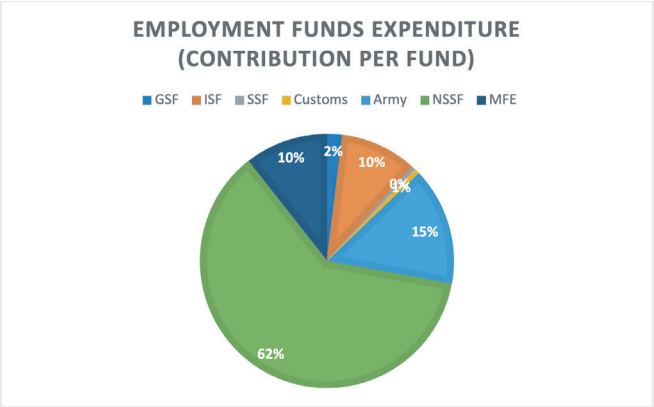


Figure 1. Distribution of the employment funds' expenditures among the different agencies. Key: GSF: General Security Forces, ISF: Internal Security Forces. SSF: State Security Forces. NSSF: National Social Security Fund. MFE: Mutuelle des Fonctionnaires de L'état (Civil Servant Cooperative)

People who do not qualify to benefit from the employment funds and who do not have the means to obtain private health insurance are in principle covered by MOPH.[13] In addition, since 2016, all Lebanese senior citizens (65 years and above) are in principle covered by the MOPH for hospitalizations.[14]

In 2012, only 8% of those eligible for MOPH coverage utilized that coverage.[11] Also there has been discontent among many Lebanese about their lack of access to hospitalization coverage; even though mentioned in the MOPH coverage agreement. This could imply exclusion of many from the coverage of the MOPH, contrary to what is on paper. Politics, confessionalism, and religious affiliation have affected access to healthcare in Lebanon;[15, 16] it is reasonable to expect access to MOPH coverage is also affected by these same factors. With rising unemployment rates, more citizens will no longer qualify for employment funds and will rely on the MOPH or OOP expenditures to cover their health expenses, all while being unable to pay for private insurance premiums as their purchasing power keeps decreasing.

The NSSF has been recording a budget deficit for several years, and some hospitals have been turning down MOPH covered patients since the ministry is failing to pay for those who theoretically qualify for coverage.[17] Since the NSSF is the largest contributor among the employment funds and the MOPH is the final safety net for citizens with no coverage, their failure to meet obligations significantly affects the goal of universal healthcare coverage. The MOPH's budget, has witnessed a significant increase from USD 232.945 million in 2005 to USD 485.899 million in 2018 (assuming the official exchange rate of 1500 LBP (Lebanese pound)/USD).[11] The highest amounts spent by the MOPH are for hospital bills and medications accounting for 64% and 22%, respectively, in 2018.

Over the past 15 years, Lebanon's health expenditures increased by 57% to reach USD 719 per capita in 2017. As a percentage of its GDP, Lebanon has one of the highest health expenditures among Arab countries (8.20% in 2018).3 As previous discussed, Although the Lebanese healthcare system has achieved good quality standards, a high healthcare spending does not eliminate disparities in access nor does it ensure safety from catastrophic expenditure for the poor.[18]

Conditions of private hospitals

The latest economic turmoil in the country has severely hit hospitals. There are 163 hospitals in Lebanon (figure 2).[11,19] To date (May 2021), hospitals are still billing for services at the same prices when the official exchange rate was 1500 LBP/USD compared to the current black market exchange rate that is closer to 12,000 LBP/USD.

Moreover, due to the financial challenges faced by insurance companies, many of them are issuing policies that exclude major hospitals - the more expensive ones - in order to provide lower and more affordable premiums.[20] In addition, the diminishing purchasing power of families is preventing many from buying private insurance policies.[21] The lack of insurance coverage for many has led to a decrease in the patient load in major hospitals (that usually charge higher prices). These individuals and families are left with no other option but try to rely on the MOPH to cover their healthcare bill.

Historically, the MOPH and the NSSF have always been in debt to hospitals with delays in paying bills.[17] These overdue bills are in LBP, and therefore are subject to all the impact of devaluation at the date of account settling. With the increase in the patients' reliance on the MOPH, the losses incurred by NSSF, and the increase in the expenses of both entities, it would be even more difficult for both the MOPH and the NSSF to fulfill their obligations to hospitals, which would further affect hospital financing. While the government has decided in

November 2019 to subsidize certain elements of healthcare by supplying foreign currency at the 1500 exchange rate (such as Medical supplies, and medications), other vital elements are not included in this subsidy scheme. For example, spare parts for medical equipment are not subsidized, and maintenance contracts for medical equipment are often breached by the manufacturer. Consequently, to remain functioning and minimize losses, many hospitals have resorted to decreasing employees' wages, laying off some employees, furloughs and downsizing or closing down some services. Despite these painful cost-saving measures, the current situation is not sustainable; the head of the private hospital syndicate Sleiman Haroun reported that15 hospitals are in imminent danger of closing and headed towards collapse.[22]

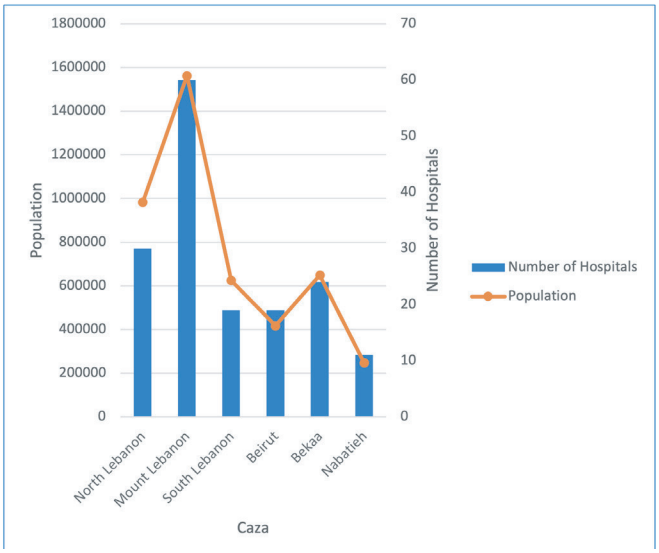


Figure 2. Number of Hospitals per district plotted along with the population size of each district

Challenges to healthcare providers

Lebanon has an abundance of Physicians to cover its healthcare needs. There are 22.71 physicians for every 10,000 people, the fifth highest density in the Eastern Mediterranean region, On the other hand, it suffers from a shortage of nurses; with 16.74 nurses and midwife personnel per 10,000 people, giving it a rank of 12/22 in the region.[7] All healthcare workers have been subject to immense pressures due to the economic and financial crisis. Medicine in Lebanon is categorized by law as a "liberal profession", thus physicians are regarded as independent professionals and could be self-employed. Accordingly, physicians are not salaried employees whether they work in private clinics or in large hospitals. Physicians' income is generated from professional fees that are charged separately from hospitals' fees. In private clinics, physicians get their professional fees directly from the patients. Similar to hospitals, physicians' professional fees as set by the Order of Physicians, are still based on LBP with only minimal adjustments to address the new exchange rate to the USD or to the new inflation rate. This, added to the drop in the purchasing power in Lebanon and the drop in hospitalizations witnessed during the COVID-19 outbreak, lead to a significant decrease in the physicians' income. Similar to other countries, physicians' income has dropped by 50% because of COVID-19.[23] However, in Lebanon, as the drop was also accompanied by devaluation of the LBP, the total expected loss in purchasing power is more than 80%

For the same reasons, many nurses were subject to salary cuts, layoffs or furloughs.[24] Accordingly, many physicians and nurses are contemplating leaving the country and securing better positions elsewhere. As of February 2021 16 to 20% of doctors have either left the country or are planning to leave,[25] and more than 1000 nurses have done the same.[26]

The Pharmaceutical and Medical Supplies Sector

There are 2,614 pharmacies across Lebanon with the majority concentrated in Mount Lebanon.[27] According to the syndicate of pharmaceutical industries in Lebanon, the Lebanese pharmaceutical market totaled USD 1.98 billion in 2019 of which USD 139 million (7% of the total market) were for products manufactured locally.[28]

Since October 2019, Lebanon's central bank (BDL) is subsidizing pharmaceutical products (including raw material for local industry) by providing 85% of the foreign currency needed for pharmaceutical imports at the previously utilized official exchange rate.[29] Along with the structure already in place for drug pricing, these measures were supposed to ensure a stable price for consumers and the continuity of business for importers and pharmacists. However, since June 2020, a shortage of medications was noted in the market. Beside the supply chain disruptions due to the COVID-19 outbreak, several local and potentially manageable factors contributed to this

shortage including: the smuggling of subsidized medications outside of the country, the stockpiling of medications by patients and local warehouses in anticipation of future pricing hikes, and the delayed processing time for subsidies by BDL.[30,31] Another undeclared and contributing cause is the potential conflict in the pricing structures between importers and the MOPH.

At the level of distribution to patients, the Lebanese syndicate of pharmacies has reported the closure of 600 pharmacies so far; around one fifth of the country's pharmacies.[32] The latter is because of significantly reduced profitability and losses incurred during the current year. Pharmacies in Lebanon sell pharmaceutical products like medications at a fixed profit margin that is set by the MOPH and based on the subsidized exchange rate. As the Lebanese pound depreciates, the actual value of the pharmacies' fixed profit margin from the sale of medication has decreased. Pharmacies have also seen a drop in their sale of ancillary products as these have become more expensive. The net outcome is the bankruptcy of many pharmacies.

A similar subsidy policy governs importing medical supplies and prosthetics into Lebanon. However, medical equipment and maintenance parts are not covered. Thus, importing any new equipment is currently subject to securing foreign currency from the black market. As the current pricing of medical services delivered remains at their pre-October 2019 levels, health providers have little incentive to purchase any medical equipment currently.

Solutions moving forward:

The influx of Syrian refugees during the past years had already imposed a heavy burden on the different pillars of the Lebanese healthcare system from primary healthcare centers to tertiary care.[33] The Lebanese healthcare sector is currently under the crushing impact of three economic factors in addition to that of the COVID-19 outbreak: 1. Loss of purchasing power of the patients, 2. Capital control measures, and 3. Devaluation of the Lebanese currency. While BDL did step in to mitigate the impact of the capital control measures on this particular sector, a more comprehensive plan is needed. This is an urgent matter especially in view of the uncertainty regarding the BDL subsidies.

From the experiences of other countries, cutting healthcare spending as part of austerity measures has shown serious negative consequences on public health,[34] and was found to have an even greater impact on access to healthcare than the economic crises themselves.[35] As such, a response plan ought to be developed jointly between the MOPH, representatives of the various members of the health sectors, and representatives of other ministries involved. The goals of this plan should be to ensure accessible healthcare service, and sustain the healthcare sector during the acute dip pending reaching a new steady state.

We provide one framework to approach the problem based on expense reduction with maintenance of healthcare quality along with financial solutions to keep the components of the healthcare sector operational.

Decreasing health expenditures and containing costs should not, in any way, compromise quality. With limited resources available and with the need to give the patient the best care possible, strategies and policies must be put in place to facilitate the adoption of a patient-based and interorganizational collaboration in the management of healthcare costs. This will bring together hospitals in the private and public sector, the MOPH as well as patient advocacy groups to coordinate efforts, guide policy, and resource allocation for better healthcare services.

Although certain patient populations (the most vulnerable, patients with less grim prognosis, and sick healthcare workers, etc) should be prioritized, financial restraints should not prevent healthcare access. Therefore, any decision making process should study the consequences of the decisions made, maximize the benefits to the person, and prioritize impartiality and the consequences towards the wider group of people affected by decisions (Not just the individual).[36] Experience from countries that underwent similar changes is a clear indicator that such a process will help guide policy makers in tough decisions, alleviate their anxiety and ensure transparency for the public.[37]

In a similar manner, efforts should be made towards measures that have the most potential to reduce costs incurred on patients and financing agencies. We propose some areas that could be good targets to reduce expenditure.

Enhancing primary and urgent care:

Although primary healthcare centers by the MOPH are distributed across the country, they still remain underdeveloped with no provision of basic diagnostic imaging and laboratory medicine. Patients still have to seek care in hospitals should they require any diagnostic tests, especially in an emergency. Primary care centers can help increase access, improve health, control illness, and decrease costs by preventing excessive charges incurred by hospital bills, thus keeping hospitalization as a last resort to patients who objectively need them. The literature supports the cost effectiveness of a switch to primary care. For instance, during the economic crisis after the fall of the Soviet Union, the Cuban healthcare system heavily relied on primary care local clinics. Even though secondary and tertiary care was severely impacted by the crisis, Cubans were very satisfied with their primary healthcare system.[38] Studies have shown that primary care and family medicine attributes do contribute to better health outcomes and to a decrease in cost along with less use of resources and hospitalization.[39] Thus, further investing in expanding the network of primary health care centers to the areas in need and studying which of them can be developed to provide urgent care with laboratory and imaging testing is an essential path. Exploring the possibility of linking these centers to neighboring facilities (hospitals, diagnostic centers, etc) for testing and referrals is also needed. Shifting care from hospitalizations to primary care centers, along with preventing readmissions is important in conserving hospital resources to treat COVID-19 patients as the number of COVID-19 hospitalizations rises.

Preventing readmissions:

A readmission is the hospitalization of a patient within a short period of time after discharge from an initial hospitalization for the same diagnosis, or as a consequence of that diagnosis. Readmissions add a large burden on patients both from the point of view of symptomatology and expenditure. In fact, in a large population study among different US states, the cost per year for patients who had a readmission was more than double that for patients without readmissions. In this study the number of chronic medical conditions was most correlated with the readmission rate. Patients with heart failure also had the highest probability of readmission.[40] Taking the model of heart failure, establishing adequate outpatient care by heart failure clinics, prompting follow up with a primary care provider, and ensuring adequate patient education are among many interventions that can prevent heart failure readmission.[41] Basing policy on these three areas can reduce readmissions and subsequently costs on government, patients and covering agencies.

Telemedicine:

Despite some disadvantages, telemedicine- or the remote diagnosis and treatment of patients by means of telecommunications technology- can help enhance healthcare for chronic illnesses. Efforts leading to guidelines and legal frameworks should be put in place to ensure the adequate protection of patients' data, along with the necessitation of patients' consent to parties that should have access to their records.[42] In Lebanon, during the COVID-19 spread, the Lebanese Order of Physicians (LOP) issued a statement authorizing telemedicine. However, this statement lacks the regulatory framework and fails to address numerous challenges including limitations, reimbursement, and the medico-legal aspects. Addressing these issues in coordination with the MOPH and the Lebanese Parliament and in an expedited track represents a good opportunity not only for local patients but also for patients with established care in Lebanon from neighboring countries. Along with the ethical and legal aspects, the public infrastructure should be addressed if telemedicine is to become a part of healthcare in Lebanon. With the power cuts and narrow data bandwidths, Lebanon lacks the proper infrastructure that is needed to support a reliable telemedicine service. Because of the lack of technology access among the underserved areas, user friendly mobile health applications can be implemented and have shown success in low income countries worldwide.[43] Telemedicine can also be used for a remote assessment of COVID-19 symptoms in terms of need for testing or hospitalization while minimizing exposure of the community and healthcare workers.

Hospitalization cost reduction:

A large part of the hospitalization costs in Lebanon is driven by medication[44] and prosthesis costs. The cost of prosthesis in Lebanon is higher than other countries with similar economic position. Furthermore, BDL subsidizes 85% of prosthetics; leaving 15% that is purchased at the black market

exchange rate of 12,000 LBP; so if an item used to cost 100 USD (150.000 LBP at the official rate) it now is 307,500 LBP with a total increase of 105% in LBP.

Reducing this cost can be modeled on successful stories in India, for example.[45] In the Indian experience, prices of certain prosthetics were largely inflated. In response the government implemented pricing brackets which were primarily from enhanced profit margins in the local market. No similar study has been conducted in Lebanon, but indicators (the high cost of prosthetics compared to other countries) point to this problematic area. Similarly, drugs in Lebanon are imported with good quality criteria but from a business perspective, the present criteria do not permit a good bargaining power to reduce cost.

On another front, the MOPH has publicly announced that certain hospitals' bills were inflated.[46] This indicates that the system currently in place to verify that the decision to hospitalize and the treatment adopted needs to be strengthened to curb greedy profit and minimize fraud. Corruption and fraud can be evidenced by the inflation in healthcare bill and can be seen in the surplus in healthcare markets encouraging unindicated use, along with a lack of laws that permit practices of accountability, transparency, and access to information.[47] The magnitude of the anticipated reduction in cost from combating fraud is not known in Lebanon. However, corruption in healthcare is a worldwide phenomenon; and experience from the United Nation's Development Program (UNDP)[48] office in Lebanon and U4-Anti-Corruption Resource[49] can help in this domain. The important central idea when combating fraud is to understand that all entry points into the health care system need to be covered in a systematic manner in order to achieve results. The full extent of healthcare fraud in Lebanon, and for that matter in other countries, cannot be measured precisely. Any successful effort to stop fraud and abuse, without unduly burdening legitimate providers, requires aggressive, innovative, and sustained attention to protect all stakeholders, including patients, hospitals and providers.

Monetary and financial solutions for hospitals:

Without a doubt, the monetary crisis impacting Lebanon is the primary driver of numerous recent challenges. The sustainability of hospitals in this critical period, especially with COVID-19, is paramount. A general overview of hospitals' challenges listed above points to the problems. The budgets of hospitals consist primarily of employees' wages, medical and pharmaceutical supplies, other supplies and capital investment. While employees' wages are still in LBP and have already depreciated with the currency devaluation, hospitals have further reduced their wage bill with cuts, layoffs or furloughs.

The other element requiring attention is the change in the currency exchange rate, which is driving the cost upward depending on how much each item is subsidized. However, three considerations need to be attended to in this system. First, Lebanon has been the destination for many patients from all around the Arab region seeking healthcare (what is known as health tourism). As such, many non-Lebanese patient come to Lebanon for its healthcare system. These patients are capable of paying according to a different scale for prosthetics and other expensive items. Therefore, non-Lebanese should be treated as per a different scale. This applies to medical tourists who have available funds to cover their healthcare with exceptions made regarding refugees who are mostly covered by NGOs. Second, the subsidy system has no evaluation and monitoring arm ensuring that there is no smuggling or overuse of items. Third, there should be some form of monitoring on what brands are being subsidized as a failing economy should focus on subsidizing the cheapest yet effective medicines and not necessarily pay a premium for particular brands when cheaper alternatives are available.

Another solution that may be considered for alleviating the monetary problems would be to provide loans for hospitals at very low rates. These loans can be used to cover for operational expenses including, maintenance of medical equipment. Other solutions can come from looking into the list of variable costs that hospitals incur (ie. electricity bills) and studying what steps can be taken on this level.

All these solutions are temporary and need to be revisited after a crisis has passed in order to provide better long term, macro-solutions for the country's monetary and financial structural problems.

Support for healthcare providers:

Adjustments to assist healthcare providers need to happen as well. In July 2020, the Lebanese Order of Physicians (LOP) have initiated an increase in the outpatient visit fee by 30%[50] and a request to the governmental insurance agencies and private insurance agencies to increase the basic fee physicians are reimbursed for procedures based on the black market USD exchange rate. This adjustment came after the LOP considered resetting all fees based on the electronic exchange price platform that is the most commonly used to determine the black market exchange rate in Lebanon nowadays. Had the second option been implemented, it would have led to a higher adjustment that would have been perceived as a significantly higher barrier to access health care.

Nurses' wage, on the other hand, are subject to existing labor contract terms and therefore suffer from a negotiation disadvantage. Although the Order of Nurses in Lebanon issues a salary scale every 3 years, with the last one issued in April 2018, most of the hospitals have yet to comply with it given their dire financial situation. There is a need to amend the law governing the nursing profession by the parliament to allow the Order, in coordination with the MOPH, to compel the salary scale on hospitals and employers. Another measure is to ensure that nurses remain employed through a variety of steps including linking monetary support to hospitals with a cessation of layoffs. Ensuring that nurses remain employed also ensures they and their families have health insurance coverage from the NSSF. Salary scale adjustments could be commenced once the situation becomes more predictable for hospitals.

Pharmaceutical industry:

The local pharmaceutical industry production accounts for less than 10% of the market share.[28] Currently medical supply and pharmaceutical imports are tax exempt and are only subject to customs fees rate of 5%.[51] This has helped the availability of a wide range of medications at lower prices, but has left local production at a disadvantage. Unlike the situation of other countries, there are no pharmaceutical trade policies that give the Lebanese industry an advantage in exports. For example, Jordan[52] and Egypt[53] have increased their pharmaceutical exports by benefiting from free trade agreements with many countries. A plan for the industry to increase its market share with clear short-term targets to address the pressing needs of Lebanese patients, and longer-term targets to reduce dependency on imports and not only limit the amount of exported foreign currency but support this industry for it to help re-balancing the trade account, is highly needed. For this to happen a deep understanding of the needs of this industry, then a commitment from the government and parliament's side to pass and enforce regulations to meet these needs is the way to proceed. This would encourage and attract investments in this sector. Ideally, this plan should also include running calculations that show how many jobs these steps will create. On an equally important level, all steps needed to raise trust in the quality of the medications produced locally, both among consumers and physicians, will be important. The infrastructure for trust-building from a regulatory and executive level is present as all the factories are certified for 'Good Manufacturing Practices' by the World Health Organization, but more investment in this area is crucial. It is worth noting that nearly all the factories are designated producers for international pharmaceutical brands, which attests to their standards. Without further detailing steps, trust-building for quality and the economic viability of this plan are key success factors. In addition to trust building, local production should be better marketed by physicians who can prescribe trade names from specific manufacturing. Physicians prescribing local products and marketing these products to their patients can greatly support the local market. The need for supporting this industry has been shown in the fears of a lack of equipment in the country at the start of the COVID-19 pandemic. These fears have been temporarily addressed with subsidies.

Concerning pharmacies, their problems – described above - are threefold. First, the pricing mechanism is leading to an overall lower profitability. Second, their overall sales decreased because of diminishing purchasing power. Finally, a significant part of their fixed cost - such as rent - is based on USD, and there is no clear ruling on which exchange rate to follow; most transactions are requiring either the 4000 LBP/USD or the 12000 LBP/USD exchange rate. Working on a composite package to tackle these problems is a reasonable and much needed approach; it would include:

adjusting the pricing mechanism, especially for generic medications, and passing regulations that subsidize the pharmacies' fixed costs (such as rent), like setting the exchange rate for their transactions, waving certain governmental/municipality fees and providing tax relief.

We summarize a general framework of approach to each sector in figure 3.

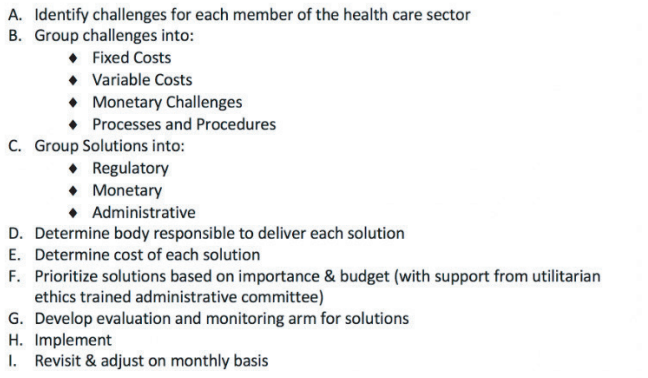


Figure 3. Framework of suggested approach to the healthcare reform plan in Lebanon during the crisis.

CONCLUSION

The health care sector in Lebanon is passing through a very difficult period, with the COVID-19 crisis on one hand and the turbulent unpredictability of the Lebanese monetary and financial conditions on the other. In this paper, we highlighted some challenges and suggested temporary solutions. The aim of these solutions is to ensure accessible health care service to the Lebanese and sustain the health care sector during the acute dip pending reaching the steady state. Ensuring that all steps are performed in an ethical, transparent, accountable, and cost-effective manner is paramount. This can only be ascertained with completing the loop with an arm for evaluation and monitoring. And all this needs to be confronted in a comprehensive plan, while remaining cognizant that in complex systems even minor changes can be either very helpful or detrimental. The other track in this plan, as mentioned in the paper's introduction, would be the medium/long term track emphasizing reform from the perspective of financing healthcare, methods of payment for services, and a set of regulations needed to link all the visited aspects with changes on the levels of organizations and behaviors of health care consumers and providers.

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