Review Article

Solutions for the "Vanishing Drug" Conundrum in Lebanon: A Change in the Subsidy System Coupled with a Digital Prescribing Platform

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ABSTRACT

The shortage of foreign currency in Lebanon due to the multiple crises that the country has been facing since October 2019 poses a threat to the importation and availability of pharmaceutical products among other essential commodities. This has been remedied by an importation subsidy system for pharmaceuticals financed by the central bank's foreign reserves. However, patients have recently experienced shortages of many drugs on pharmacy shelves. In this paper, we describe the pharmaceutical supply chain in Lebanon along with the subsidy system put in place by the central bank. We then propose recommendations to improve this subsidy system and enhance prescribing practices in order to ensure the continuous presence of medications on pharmacy shelves, and that the foreign currency supplied by the central bank is spent to the benefit of the Lebanese patient.

Keywords: crisis; economics; Lebanon; pharmaceutical preparations

INTRODUCTION

Lebanon has been passing through multiple catastrophic crises since October 2019. The devaluation of the Lebanese pound along with the unofficial capital control and shortage of foreign currency continue to pose a threat to importation and affordability of essential commodities. To ensure the availability of these commodities at affordable prices, the central bank has used its foreign currency reserves to subsidize a few essential commodities, including pharmaceutical products. Despite that, several pharmacies began to report shortages of many drugs starting June 2020. These shortages might be caused by the smuggling of subsidized products outside the country, the stockpiling of chronically used medicines by patients and warehouses, and a possible delay in processing requests by the central bank.[1,2] Furthermore, a previous announcement by the central bank governor that the bank will be unable to continue subsidizing the importation of pharmaceuticals led to widespread panic, a rush to acquire medication refills and possibly excessive stockpiling of medications by patients.[3] While there is a need for an urgent plan to keep medications available at an affordable price, this plan has to be realistic and feasible. In this short paper, we describe the supply chain of imported medications in Lebanon in order to propose immediate solutions to the current crisis.

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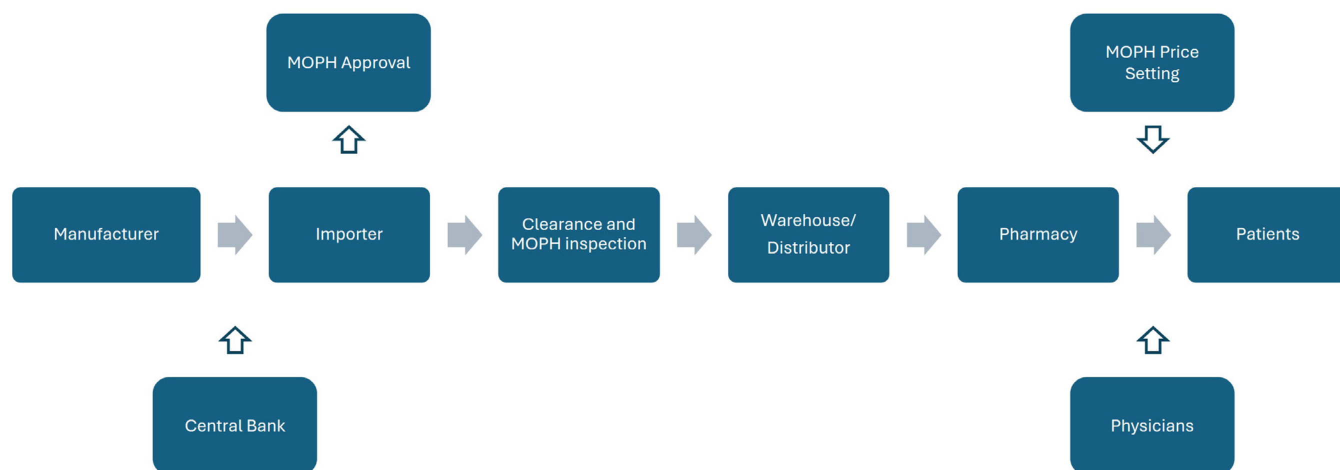

Figure 1: Diagram of the pharmaceutical supply chain of imported medications in Lebanon. Abbreviations: MOPH: Ministry of Public Health

Only 7% of the pharmaceutical market (totaling USD 1.98 billion in 2019) in Lebanon consists of products manufactured locally.[4] Thus, there is a high dependence on imported medications for the needs of residents in the country who include Lebanese (4.9 million),[5] Syrian refugees (1.5 million)[6] and Palestinian refugees (192 thousand)[7]. Figure 1 describes the supply chain of imported medications from the manufacturers in exporting countries to the patient.[8, 9] The central bank subsidy system consists of providing 85% of the foreign currency needed for drug importation at the official exchange rate of LBP (Lebanese Pound) 1,500 per USD,[10] with the remaining 15% to be bought by the importer in the black market at the unofficial exchange rate (which currently fluctuates around LBP 12,000 per USD). This has kept the supply chain going with a stable price based on the already existing pricing structure set by the Ministry of Public Health (MOPH). However, the ratio of the total amount spent on medications to GDP (Gross Domestic Product) in Lebanon, which was quite elevated before October 2019, continued to increase as GDP contracted while the pharmaceutical consumption has remained at roughly the same level.[11] Medication spending is a large part of household expenditure in Lebanon[12] which could be explained by cost and by a high utilization of medications.

Importers then supply the distributors who store the medications in warehouses and dispense them to pharmacies based on their needs/requests. Not infrequently, the importers are themselves the distributors. Recently, the minister of public health has pointed that drug hoarding by distributors and pharmacies, to smuggle these medications outside of Lebanon or practice favoritism when selling to patients, has occurred and contributed to the medications shortage.[13,14] The minister and department of pharmacist inspection at the ministry performed raids on warehouses and pharmacies to address that.[14,15] They caught and penalized certain pharmacies. However, since the price of medications in Lebanon remains very low compared to neighboring countries, there has been continued attempts at smuggling medications.[15] By law, pharmacists are not allowed to dispense medications that are not on the "Over-the-Counter Medications List" (OTC List) set by MOPH without a unified prescription filled by a physician.[16] However, in practice, pharmacists do dispense many medications not on the OTC List without a prescription with the exception of psychotropic medications. Patients then pay for these medications

out-of-pocket. Those who benefit from employment funds get partially reimbursed through the National Social Security Fund (NSSF) or some third-party payers.[17] Those who rely on MOPH (the final safety net for Lebanese who are uninsured) can get free medicines for chronic medical problems based on a WHO essential list of medicines[18] procured by MOPH and distributed to its contracted primary health care centers via the Young Men's Christian Association (YMCA).

Any solution which aims to maintain access to affordable drugs in a sustainable manner should ensure their availability to the whole population including those with no coverage especially with the growing number of unemployed people. Such an approach can complement the drugs provided to the most vulnerable by the MOPH through YMCA.

Proposed Solutions

We propose a set of reforms to ensure the continuous presence of medications on pharmacy shelves, and that lessen the strain on the foreign currency reserves of central bank. These reforms focus on reducing the cost of the subsidy system and ensuring that the subsidized medications are fairly distributed to the patients who need them. The proposed solutions target two interfaces in the diagram of Figure 1: Introducing a tender subsidy and addressing the prescription system that regulates drug dispensing by pharmacies.

Amending the subsidy system:

When faced with a limited supply of foreign currency – which is the case of Lebanon today – it becomes essential to only subsidize what is needed. A review of the Lebanese National Drugs Database[19] reveals the availability of drugs for the same ailments from different manufacturers with variable prices. All drugs imported are subsidized by the central bank at the same rate. A first step would be to reduce cost by choosing to subsidize the import of the cheapest drugs without compromising on therapeutic effect. For example, there are more than 20 different trade names for the same molecule of atorvastatin - a statin medication used to prevent cardiovascular disease - and all are subsidized even though their prices range from LBP 8,977 to LBP 42,470 for 30 tablets of 10mg atorvastatin.[19] Subsidizing two formulations for atorvastatin chosen for their quality and lower cost can decrease the burden on the central bank, ensure all patients who are prescribed atorvastatin can acquire it, and force other importers from other manufacturers to lower their prices to be competitive in the new market. We propose two formulations per medication because, in the aftermath of the COVID-19 experience when all international supply chains were strained, relying on one supply source is not wise. Furthermore, while one formulation must be international it is highly advisable that the other selections be from a local source. Many medications for various disease conditions are produced locally and are already available in the market. This would permit a strategic favorable alteration of the market at many levels, supporting the local pharmaceutical industry.[20]

The selection of the brands of medications that would be eligible for subsidies should be performed under the most transparent measures possible (Transparency is a major aspect of the Public Procurement Law required by the CEDRE conference).[21] The NSSF has already in place a list of medications that it covers. This list can be used to specify the medications that will benefit from subsidized importation. Ideally, the MOPH should conduct a study showing potential savings from adopting this strategy and use it to ensure buy-in from stakeholders such as health coverage agencies who would benefit from the resulting decrease in bills.

A more daring step to be considered later would be to perform a cost-effectiveness analysis that can be used to choose among medicines that are not equivalent in terms of dose or therapeutic effect but that are used to treat the same clinical condition (e.g. antidiabetics, antihypertensives, lipid lowering agents). This will ensure the continuity of essential services. Revisiting the options available altogether in light of the publication of new evidence-based guidelines and market changes, such as patent expiration in search for more affordable ones, is also important. Whether this is to be accomplished solely by the MOPH or as part of a public-private partnership program is to be studied. One way to increase the success rate of such an endeavor would be to have an international accredited partner to work on certain areas for guidance. An example of such an area is cost-effectiveness analysis.[22] Recent studies have identified methods to ameliorate

limitations of the international applicability of established cost-effectiveness studies so they can be used in countries such as Lebanon.[23]

As the subsidized choices become available in the market, the non-subsidized options will be repriced based on the real market exchange rate. Such an arrangement will enable pharmacies to recapitalize while allowing patients who are capable and willing to pay for non-subsidized brands to retain that choice. It will also permit an assessment of the ratio of consumption of non-subsidized to subsidized brands and the planning of further reforms of the supply chain, possibly leading to tapering the subsidy system altogether for all medications within a reasonable time frame. This timeframe will be determined by several factors including the overall monetary regulations reforms, and political landscape after the parliamentary elections.

Table 1: Comparison between current subsidy system and our proposed subsidy system.

Current Subsidy System	Proposed Subsidy System
All Medications Subsidized	2 brand names per molecule subsidized
Majority of subsidized are imported medications	1 local brand name and 1 imported brand name subsidized
Expensive and cheap brands subsidized	Cheapest good quality brands subsidized

Enforcing Prescription Laws:

One of the reasons of medication shortages on pharmacy shelves is allegedly the stockpiling by patients and pharmacy customers at home. A pharmacy customer can purchase a majority of medications in Lebanon with no prescription. Even with the limitation on the number of doses per patient that a pharmacy can sell, patients can shop at different outlets until they acquire the desired reserve quantities. The laws are in place to mandate the dispensing of medications according to the quantities prescribed by a physician using a unified prescription form.[24] Implementing these laws would be a good step towards preventing the stockpiling of medications at home. However, in the context of the coronavirus pandemic and the inability of many patients to afford regular physician visits to renew their prescriptions, asking patients to frequent their physician's office is not always practical. Alternatives would be for MOPH to issue a ministerial decision authorizing doctor prescription by phone to pharmacies requested by patients. Pharmacists will document these orders in their current existing documentation systems. This will be a bold move by the MOPH towards adopting an electronic prescription system and electronic health records in coordination with the orders of physicians, pharmacists and hospitals' syndicate.

Digital prescribing by physicians has numerous advantages and disadvantages that are depicted in Table 1 below. However, in addition to limiting patient stockpiling, digital prescribing can make tracing sales easier, thus preventing fraud, smuggling and corruption, and permitting a better analysis of consumer, prescriber and pharmacist behavior. This behavior analysis would permit an evidence-based gauging of needs and enable future analyses and implementation of pharmaceutical health policies that can further improve patients' outcomes while reducing the costs incurred by payers.

Table 2: Digital Prescribing advantages and disadvantages (Source: US Pharmacist)[25]

Advantages	Disadvantages
Better monitoring of pharmacy sales	Costs of the software and maintenance
Prevents stockpiling by patients	Risk of inaccuracies in choosing dispensers
Facilitates consumer, prescriber, and dispenser behavior analysis	System lags
Provides access to patient prescription history	Software design causing errors in filling and dispensing prescriptions
Overcomes problems with legibility of handwritten prescriptions.	Requires training for prescribers and dispensers
Can complement Telemedicine	Security risks (Patient Privacy)

Barriers to Implementation:

Implementing the above proposals has many challenges. Subsidizing only select medications can lead to many importers, those whose trade names will not be subsidized, leaving the market. This in turn would lead to the loss of jobs and businesses. Naturally, the pharmaceutical importer community will not welcome this. However, coupling the latter with two measures: a) repricing other trade names, that are non-subsidized, based on real exchange rate market value and b) possibly permitting exporting the surplus of non-subsidized medications from the Lebanese market within 2 months from proper implementation, may be enough to surpass this barrier. These measures will allow recapitalization by importers and pharmacies. Furthermore, choosing what to subsidize without a need-based analysis will be a challenge.

The shift to digital prescriptions and use of electronic health records will require the ministerial decrees for the implementation of the laws related to adopting unique identifier for patients and electronic signature.[26] Lately, a turf battle occurred between the syndicate of pharmacies and the Lebanese Order of Physicians (LOP) over prescribing and delivering vaccines (Pharmacies were permitted to administer vaccines after this has been the responsibility of the physician).[27] A similar conflict could be circumvented via maintaining the financial incentive that the LOP gain from the current paper-based unified prescription. This financial incentive is income to the retirement fund as each paper prescription has an embedded stamp worth 250LBP from the LOP. Furthermore, The MOPH in collaboration with multiple healthcare bodies, has already proposed a road map for digital health progress,[28] and any implementation of digital prescribing should ideally be part of that road map. Implementing this measure is furthermore facilitated by the expertise that MOPH has gained from the setup of the network of dispensaries in collaboration with the YMCA which uses electronic health records to track patients and their medication use. Expanding this existing service can be an effective quick solution.[29]

CONCLUSION

Addressing the medication shortage crisis is of utmost importance as it directly affects the livelihood of many. The role of the ministry of public health as a regulator of each of the elements of the supply chain described above is essential. However, the above suggested changes will also require the cooperation of the ministry of economy and trade, the ministry of finance, the central bank of Lebanon, the syndicate of medication importers, the syndicate of pharmaceutical industries, the syndicate of pharmacies, the Lebanese Order of Physicians, the consumer protection representatives and the Lebanese parliament. All these actors are stakeholders needed for regulatory changes, smooth transitioning and training of end users, and to put in place an evaluation and monitoring system. Revisiting the subsidy system and enhancing prescribing practices by introducing digital prescriptions can assist in wise spending of the central bank foreign currency reserves; ensure that what is spent is benefitting the highest number of eligible patients; and permit data generation for further optimization of processes and outcomes. However, for these changes to succeed, we cannot underestimate the need to get the consent of various stakeholders through minimizing the inevitable financial losses they may incur. One of the key steps to follow would be an in-depth assessment of how to ensure rational prescription practices and decrease overall pharmaceutical utilization. This needs to happen in the context of an overall reform plan for health care[20] inspired by countries that have successfully managed their health sector through economic crises such as many European countries that took the opportunity to introduce positive changes.[30]

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