

Khattar, Georges; Hallit, Jennifer; El Chamieh, Carolla; Sanayeh, Elie Bou

Article

Cardiovascular drug shortages in Lebanon: A broken heart

Health Economics Review

Provided in Cooperation with:

Springer Nature

Suggested Citation: Khattar, Georges; Hallit, Jennifer; El Chamieh, Carolla; Sanayeh, Elie Bou (2022) : Cardiovascular drug shortages in Lebanon: A broken heart, Health Economics Review, ISSN 2191-1991, Springer, Heidelberg, Vol. 12, Iss. 1, pp. 1-2, <https://doi.org/10.1186/s13561-022-00369-9>

This Version is available at:

<https://hdl.handle.net/10419/285261>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0/>

COMMENTARY

Open Access

Cardiovascular drug shortages in Lebanon: a broken heart



Georges Khattar^{1,2†}, Jennifer Hallit³, Carolla El Chamieh¹ and Elie Bou Sanayeh^{4*†} 

Abstract

For nearly 3 years now, Lebanon has been assailed by compounded crises. With the economic instability, the coronavirus pandemic, and the explosion of the Beirut Port on August 4, 2020; the fragile Lebanese healthcare system has found itself at massive risk of a catastrophic public health crisis secondary to cardiovascular drug shortages. The time has come for public health authorities to find urgent solutions for this national tragedy that is projected to last for years.

Keywords: Drug shortages, Pharmaceutical industry, Public health crisis

Background

Despite the enormous technological advances in the pharmaceutical industry and supply chains, drug shortages are a rising issue that peaked during the coronavirus-19 era, in the Middle East region [1] and specifically in Lebanon. Add to the effect of the pandemic, a drop in the local currency of more than 90% of its value with an enormous fall in the real Gross domestic product per capita of 37.1%; the fragile healthcare system in Lebanon has found itself at massive risk of a catastrophic public health crisis secondary to drug shortage [2].

Cardiovascular drug shortages

As the leading cause of death worldwide and in Lebanon, cardiovascular diseases would be the pivot of the crisis. The shortages in essential outpatient cardiovascular drugs such as antihypertensives, antiplatelets, and antiarrhythmics have generated an increase in the incidence of decompensated heart failure, myocardial infarction secondary to stent thrombosis, and unstable arrhythmias requiring emergent interventions. Even in the

inpatient setting, widely-available intravenous drugs have become extinct, such as loop diuretics, antiarrhythmics, anticoagulants, and even vasopressors, leaving physicians helpless in front of patients in life-threatening conditions. This situation has led to the loss of confidence in the Lebanese healthcare system despite its globally acclaimed hospitals, medical faculties, and internationally distinguished graduates [3].

Root of the problem

Factors involved in drug shortages in Lebanon are complex. Following the Lebanese Civil War in 1975, the country's healthcare system have been struggling to grow, mainly due to the multiple national and regional political conflicts and corruption. Therefore, this fragile system's collapse was precipitated by the events that has been ongoing since 2019.

In a country that relies mainly on imported drugs, or imported raw materials for local production of some pharmaceutical products, the economic crisis with the shortage of foreign currency, the devaluation of the local one, and lifting subsidies on essential products have limited the importation and fabrication processes⁴. In fact, as per the World Bank, this economic and financial crisis ranks in the top 3 most severe crises globally since the nineteenth century, with an inflation rate of over

* Correspondence: elie.h.bousanayeh@gmail.com

†Elie Bou Sanayeh shared co-authorship with Georges Khattar.

⁴Department of Internal Medicine, American University of Beirut Medical Center, Beirut, Lebanon

Full list of author information is available at the end of the article



© The Author(s). 2022 **Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>. The Creative Commons Public Domain Dedication waiver (<http://creativecommons.org/publicdomain/zero/1.0/>) applies to the data made available in this article, unless otherwise stated in a credit line to the data.

131.9% over the first 6 months of 2021 [2]. Moreover, the destruction of the country's principal port in August 2020 has enormously aggravated the situation, leading to the failure of drugs' production chains threatening the availability of any locally produced generic version. Subsequently, a massive strain was created on drug availability. Furthermore, as the government was planning to lift subsidies, fear of not finding chronic cardiovascular medications on the market has worsened the crisis as citizens rushed to hoarding them. Besides, smuggling subsidized cardiovascular drugs to foreign countries via black markets has created a considerable gap leaving the pharmacy shelves empty [4].

Required interventions

Drug shortage in Lebanon is a national tragedy and a threat to national security that is projected to last for years, impacting the optimal medical management and the quality of care. Patients' lives depend upon public health authorities to find urgent solutions for this critical healthcare issue. In addition to imposing strict control over the pharmaceutical business to disable black markets, potential solutions to guarantee continuous drugs availability would be to incentivize and sponsor local pharmaceutical companies to produce accessible alternatives, as importation options have become limited. Meanwhile, physicians must adapt to these strange circumstances and treat with what is available until a solution arises [5].

Acknowledgments

Not applicable.

Authors' contributions

EBS and CEC: Original concept; GK and EBS conceptualization of the paper and writing of the first draft; JH and CEC revisions. All authors reviewed the manuscript.

Funding

None.

Availability of data and materials

Not applicable.

Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Competing interests

The authors have nothing to disclose.

Author details

¹Faculty of Medicine and Medical Sciences, Holy Spirit University of Kaslik (USEK), Jounieh, Lebanon. ²Notre Dame des Secours University Hospital, Jbeil, Lebanon. ³Department of Pediatrics, American University of Beirut Medical Center, Beirut, Lebanon. ⁴Department of Internal Medicine, American University of Beirut Medical Center, Beirut, Lebanon.

Received: 11 March 2022 Accepted: 30 March 2022

Published online: 11 April 2022

References

1. Sen-Crowe B, McKenney M, Elkbuli A. Medication shortages during the COVID-19 pandemic: saving more than COVID lives. *Am J Emerg Med.* 2021; 45:557–9. <https://doi.org/10.1016/j.ajem.2020.07.044>.
2. World Bank. Lebanon Economic Monitor, Spring 2021 : Lebanon sinking (to the top 3). 2021. Elibrary. Retrieved February 2022, from <https://elibrary.worldbank.org/doi/pdf/10.1596/35626>.
3. Akl EA, Maroun N, Major S, Chahoud B, Schünemann HJ. Graduates of Lebanese medical schools in the United States: an observational study of international migration of physicians. *BMC Health Serv Res.* 2007;7(1). <https://doi.org/10.1186/1472-6963-7-49>.
4. Das M. Lebanon faces critical shortage of drugs. *Lancet Oncol.* 2021;22(8): 1063. [https://doi.org/10.1016/S1470-2045\(21\)00396-X](https://doi.org/10.1016/S1470-2045(21)00396-X).
5. Bizri AR, Khalil PB. A Lebanese physician's dilemma: not how, but with what? *Lancet.* 2021.

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Ready to submit your research? Choose BMC and benefit from:

- fast, convenient online submission
- thorough peer review by experienced researchers in your field
- rapid publication on acceptance
- support for research data, including large and complex data types
- gold Open Access which fosters wider collaboration and increased citations
- maximum visibility for your research: over 100M website views per year

At BMC, research is always in progress.

Learn more biomedcentral.com/submissions

