Addressing Inappropriate Prescribing of Pharmaceuticals in Lebanon: From Evidence to Action

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Inappropriate prescribing of pharmaceuticals in Lebanon puts patients at risk of serious adverse effects, leads to drug resistance, and increases the economic burden on patients, the community and governments at large. Inappropriate prescribing can also lead to prolonged illnesses and hospitalizations, all of which contribute to excess morbidity and mortality.

> Inappropriate prescribing occurs when medicines are not prescribed in accordance with guidelines and based on scientific evidence to ensure safe, effective and economic use (WHO, 2012).

Magnitude of the Issue

A number of local studies conducted in Lebanon point to poor prescribing practices. For instance, nationally compiled data from 16 hospitals over a period of 3 years revealed that antimicrobial resistance is becoming a major problem in Lebanon (Chamoun et al, 2016). The latter has been attributed to incorrect prescriptions, inappropriate use of antimicrobials, over-use of injections, failure to prescribe in compliance with guidelines, and non-adherence to dosing regimen. Moreover, prescription forms were found to contain various errors: for instance, 40% of all prescriptions in seven hospitals in Lebanon contained an error, of which 9% were unnecessary medication prescription, 7% were non-indicated medication, 6% had a deficiency in medication dosage, 3.5% had an inadequate duration and 2.8% had an inadequate rate (Al-Hajje, 2012). The problem is further aggravated as pharmacists have been found to dispense medications without prescriptions (El-Jardali et al; forthcoming; Farah et al., 2015).

These inappropriate prescribing practices have contributed to the high costs of pharmaceuticals in Lebanon. According to the National Health Accounts published by the MOPH in 2012, an estimated 33% of the total health expenditures is spent on pharmaceuticals. The per capita spending on drugs is considered one of the highest in the Middle East and the seventh highest globally at 3.1% (IFPM, 2012; The Lebanon Brief, 2012; OECD 2013). Moreover, 48.17% of households' annual health expenditure is spent on drugs (Ammar, 2009). Nonetheless, attempts are being made to reduce the high expenditures on pharmaceuticals. For instance, implementation of the unified medical prescription has led to a decrease in the prices of several originator drugs to promote competition with their generic equivalents. However, evidence from a recent study revealed that the unified medical prescription is not being properly implemented with poor adherence of providers and patients to the policy (El-Jardali et al., forthcoming).

Call for action

Given that this health issue is considered a priority for the Ministry of Public Health (MOPH) in Lebanon, the Knowledge to Policy (K2P) Center, at the Faculty of Health Sciences at the American University of Beirut, collaborated with the MOPH to convene a Policy Dialogue on Friday October 14, 2016, titled 'Improving the Prescribing Quality and Pattern of Pharmaceutical Drugs in Lebanon.' The dialogue hosted 27 key policymakers and stakeholders, representing: the Ministry of Public Health, the Lebanese Order of Physicians (LOP), the Syndicate of Hospitals, the Order of Nurses, Syndicate of Pharmaceutical Plants, National Social Security Fund, academic medical centers, schools of medicine, LOP scientific societies, insurance companies and national and international NGOs, in addition to physicians, pharmacists, and academic researchers.

The dialogue was informed by a pre-circulated K2P Policy Brief which served as the starting point for off-the-record deliberations, with the goal of sparking insights about and generating action on this pressing health challenge. The K2P Policy Brief[1] was prepared by synthesizing and contextualizing the best available evidence about the problem and viable solutions and elements to address the problem through the involvement of content experts, policymakers and stakeholders.

The first segment of the dialogue focused on the problem of inappropriate drug prescribing and its underlying causes. Participants endorsed the existence of the problem and agreed on the need to focus on the many factors that are leading to the problem. Participants also acknowledged the global nature of the problem as well as its persistence in Lebanon throughout the years. The majority of participants attributed the problem to a combination of factors, mainly 1) gaps in knowledge where physicians may not be adequately exposed to prescription education at the undergraduate level as well as post-graduate through continuing medical education; 2) motivational bias where physicians' interactions with the pharmaceutical industry may alter prescribing behavior in favor of promoted drugs; 3) and cultural factors where patients' expectations for medication may influence prescribing behaviors.

In the second segment, participants deliberated about four elements of an approach to address the problem at different levels of the health system.

Element one targeted regulatory and policy-level measures to support rational drug prescribing. These included policies to regulate health care professionals' interaction with the pharmaceutical industry and policies to ensure the quality of drugs, including generics, available in the market. Regulatory measures covered codes of ethics, disclosure of clinician-industry interactions, and management of clinician-industry interactions (e.g. total ban of interactions or restriction of some interactions).

Element two focused on organizational-level interventions, specifically the implementation of standardized clinical guidelines, systems for prescription audit and feedback, clinical pharmacy services, and antimicrobial stewardship programs to promote appropriate prescribing.

Element three addressed professional-level interventions with a focus on the integration of education about conflict of interest in undergraduate curricula, problem-based training in pharmacotherapy for physicians and academic detailing to promote rational prescribing.

Element four concerned interventions aimed at empowering patients on the proper use of medication. These included patient-targeted interventions such as education and awareness campaigns to improve patient use of medication as well as physician-targeted interventions such as communication skills training to manage consumer expectations of medication prescription.

Deliberations also tackled implementation barriers and proposed counterstrategies at each level.

Key recommendations and next steps

Participants discussed and agreed on the following key recommendations and next steps to improve appropriate prescribing of pharmaceuticals in Lebanon.

Recommended action

At the regulatory and policy level

Reinforce and implement the Lebanese Code of Ethics on Pharmaceutical Promotions. The implementation process can be strengthened in the following ways:

→ Strengthen collaborations between Syndicate of Hospitals, Order of Physicians, Order of Nurses and Order of Pharmacists to ensure they are equally active and

accountable for its implementation.
→ Empower providers to become active participants in recognizing and reporting Code breaches.
→ Raise awareness about the Codes of Ethics by mandating regular briefings to members of the different Orders and Syndicates including all Scientific Societies belonging to Order of Physicians.
→ Incorporate the Code of Ethics into the curricula of medical, nursing and pharmacy students.
→ Design a monitoring and evaluation plan to evaluate the effectiveness of the Code of Ethics.
Consider establishing institutional policies guiding the interactions between health care professionals and pharmaceutical industries within academic medical centers and schools of medicines
Leverage on the MOPH's Health Technology Assessment (HTA) program to ensure cost-effectiveness and safety of drugs.
Ensure the quality of drugs by enhancing the transparency of the drug regulatory process, mandating renewal of drug registration, and establishing a system to follow-up on drug quality post-registration.
Enhance implementation of the unified medical prescription by eliminating requirements for diagnostic tests which can deviate the form from its intended purpose; publicizing the national substitution drug list; issuing a list of over-the-counter drugs that can be disbursed without prescription; and computerizing the form.
Design a national communication plan to promote generic drugs and demystify misconceptions and perceptions about the inferiority of generics relative to branded drugs among providers.

Adopt a list of reimbursable generic drugs by National Social Security Fund and other third party payers.

At the organizational level

→ Integrate clinical pharmacy services into hospitals by lobbying and advocating for the draft law that was submitted by the Syndicate of Hospitals to the parliament and still not executed.
→ Enhance collaborations between the Order of Pharmacists and Order of Physicians to standardize the definition for clinical pharmacy services, clarify the scope of practice of clinical pharmacists and support universities in establishing degrees specific to clinical pharmacy.
Conduct internal audit and feedback on providers' prescribing patterns. This can be achieved by establishing prescribing targets for specific classes of therapeutic drugs and linking the targets to incentive systems. Considerations could be given to link prescribing patterns to performance appraisals.
Develop or adapt evidence-based clinical guidelines to support decision-making about medicines.
Implement antimicrobial stewardship programs in acute care hospitals to promote appropriate prescribing and control antimicrobial resistance.

At the professional level

Revise undergraduate curricula of medical, nursing and pharmacy students to integrate:
→ Education about conflict of interest and drug promotion.
→ Courses on inter-professional education with a focus on physicians and pharmacists.
→ Courses on communications skills training for physicians.
→ Courses on problem-based pharmacotherapy for physicians (e.g. WHO Guide to Good Prescribing).
Develop a Lebanese Board and re-evaluate the colloquium examinations of providers.
Validate Continuing Medical Education (CME) through scientific societies belonging to the Order of Physicians and make it mandatory for providers.

At the patient level

→ Design national awareness campaigns to promote appropriate use of medications.
→ Develop patient education materials such as brochures and flyers to educate patients on the use of medications, expectations for medication prescription, and antibiotic resistance.